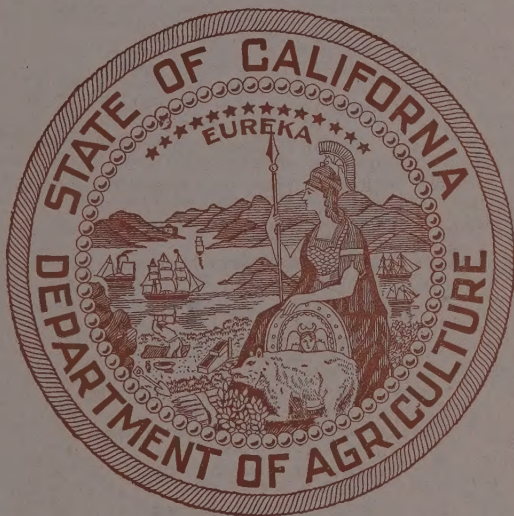


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APRIL-MAY-JUNE
1954



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THE BULLETIN

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W. C. JACOBSEN Acting Director
EDNA WILLIS GASKILL Editor

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BULLETIN EDITOR RETIRES

Edna Willis Gaskill, Editorial Assistant, State Department of Agriculture, retired May 1st with 34 years of state service, 30 of which have been with the Department of Agriculture. She served under seven directors.

More than 100 of her fellow workers and friends gathered at the Bellue Ranch near Sacramento to honor her on her retirement. As a token of the esteem in which she is held, a jeweled watch was presented to her by W. C. Jacobsen, the Acting Director.

Mrs. Gaskill became Editor of the Department of Agriculture Monthly Bulletin in 1932, a position which she has held continuously. The Bulletin, now a quarterly, is recognized as one of the outstanding state agricultural publications in the United States, and has world-wide circulation on an exchange basis. For the information of technical officials in the department, Mrs. Gaskill has translated publications, letters, and manuscripts from many of the foreign countries interested in agriculture.

Mrs. Gaskill was born in Oakland, but most of her early life was spent in Vallejo.

While Mrs. Gaskill will continue to make her home in Sacramento, she expects to spend short periods in New Mexico with her son and daughter-in-law. Her son is a technical engineer on the staff of the Sandie Corporation with headquarters in Albuquerque. Trips to Mexico and the South American countries are also planned.

SOME VIRUS AND VIRUS-LIKE DISEASES OF GRAPEVINES *

By W. M. B. HEWITT, Associate Professor of Plant Pathology, Department of
Plant Pathology, University of California, Davis, California

Several virus and virus-like diseases of grapevines have been found in California vineyards in the past few years. Some of these kill within a few years, while others bring about a gradual decline that shortens the productive life of the vineyard. Since all of these diseases may be spread through propagating wood, care should be taken to make sure that sources of buds, scions and cuttings are free of these diseases.

As the grape industry in California has developed through the years, many varieties and rootstocks have been introduced from Europe and Asia. Some of these introductions contained diseased vines which have been planted along with normal vines. A few of these diseases have spread naturally into vineyards, and others have been spread by propagation.

The rather extensive replanting of old vineyards and the planting of new ones have created a demand for propagating wood of rootstocks and wine and table grape varieties, particularly the finer ones. Consequently the stocks and variety wood have often been obtained wherever possible. Some were grafted onto established vines to hasten the production of wood and to hurry up their maturity for fruit production or to replace a less desirable variety. In some cases, the old vines so top worked were diseased and infected the new wood. Rootstock propagating wood frequently has been obtained from vines where the top had died and from those where the graft or bud had failed to grow. Such rootstock vines are often diseased but do not show symptoms.

These practices have distributed several virus and virus-like diseases of grapevines into many of the grape growing districts of California. Some of the virus diseases spread naturally in the vineyard, either rapidly (Pierce's disease for example) or rather slowly (like yellow mosaic). But all of them, virus and virus-like diseases, are carried in the propagating wood taken from diseased vines.

There is also good evidence that some of these virus diseases will be retained in the soil after the old vineyards are removed. When new vines are replanted in the soil, the virus will transmit to them.

The best control of many of these diseases is, of course, to avoid propagating or planting infected material. When planning a new vineyard, it will be very profitable to select propagating wood from vines free of disease, true to variety, and of high-producing strains. Care must be taken to obtain rootstocks that have been tested and are known to be free of diseases.

* A descriptive article prepared to aid in the identification of some grape diseases found in California vineyards. Information used in the preparation of this article came from research of the author and from published papers of several other workers. Though not referred to specifically, the reports of these authors are gratefully acknowledged. Photographs were taken and prepared by Mrs. M. Mann.



PLATE 1. *Upper*—Red Emperor vine with White Emperor disease. Note colored and noncolored fruit bunches. Symptoms are discussed in the text. *Lower*—A vine of the variety Melon showing rather severe leaf roll. In many ways the symptoms resemble those of White Emperor.



PLATE 2. *Upper*—Yellow mosaic disease in a vine of the variety Pinot blanc. *Lower*—Leaf symptoms associated with unfruitful vines of the variety Emperor. These symptoms are not the same as those on vines with yellow mosaic.



FIGURE 2. Shoot of Cabernet Sauvignon showing symptoms of fanleaf. The shoot stem is normal, but the leaves are malformed and mottled.

The diseases described in this article have been divided into two general groups: the virus diseases and the virus-like diseases. The virus diseases are known to transmit from diseased to healthy vines. Transmission may be by vectors or by grafting. Very little experimental work has been done with the virus-like diseases, and it is not yet known whether they will spread or transmit to healthy stocks. It is known, however, that they go along with the wood, creating the same symptoms in new vines propagated from it.



FIGURE 1. Pinot Chardonnay shoot from a vine with fanleaf disease showing short internodes, double nodes, and leaf deformity.



FIGURE 3. Leaves from a shoot of Cabernet Sauvignon showing leaf symptoms of fanleaf.

VIRUS DISEASES OF THE VINE

The diseases known to transmit by grafting or by insect vectors and to show definite evidence of spread in California vineyards are fanleaf, yellow mosaic, white emperor, and Pierce's disease.



FIGURE 4. Symptoms of fanleaf in leaves of Pinot Chardonnay. The leaf in the upper left is normal.

The *fanleaf disease* has without question been present in some California vineyards for many years. It has been spread through propagating wood of some varieties and rootstocks into many vineyards and into new areas. The disease affects varieties differently. Some varieties and rootstocks in the disease experimental plots at Davis do not show symptoms even after inoculation. In many varieties of grapes, however, fanleaf produces distinct symptoms and causes decline and gradual death of the vines.

The fanleaf disease occurs in many European countries, where it is known under different names. In France it is called *court-noué* and *dégénérescence infectieuse*; in Italy, *arricciamento* or *roncet*; in Portugal, *urticado*; and in Germany, *reisigkrankheit*. The disease has also been reported in North Africa, South Africa, and Switzerland, and similar diseases occur in Czechoslovakia and Hungary.

Leaf symptoms are generally pronounced in the early season's growth, becoming less distinct as the season advances. Mottling often shows in the new shoots or suckers arising in the center of the vine, where they are shaded. It is also distinct in young leaves, fading out in old leaves. Mottling symptoms are more prominent in cool than in hot weather. The symptoms associated with fanleaf differ with the variety, vigor, and season.

Leaves show varying degrees of deformity (Figs. 3, 4). The margins may be deeply lobed with tooth- or nettle leaf-like margins (Fig. 4). The petiole sinus opens in some cases to as much as 200 degrees giving the leaf veins the effect of a closing fan (Fig. 4). In some varieties, the leaf surface becomes rough and pitted (Fig. 7). Leaves may also be smaller than in healthy vines.

Mottling in the leaves shows up in varying shades of green, in variegation, veinlet clearing, speckling, and rings, and in oak leaf-like patterns over the surface (Figs. 1 to 6). Sometimes the mottling appears to leak from the veins into the tissue, forming blotches of lighter green tissue that take various shapes (Figs. 5, 6).

New shoot growth may be delayed in many vines infected with fanleaf. The young leaves often appear smaller than normal. In some varieties, they remain clasped together and stand straight up along the shoot stem instead of opening out and drooping in a normal manner. The leaves on some shoots may appear crowded at the base because of very close nodes. The stems of other shoots may be flattened. Very short internodes and even double nodes may be found rather frequently in shoots of some varieties (Fig. 1).

The canes of fanleaf-diseased vines may show such symptoms as weak growth in advanced cases of disease, a zig-zag type of growth bending at the nodes, swollen nodes, short internodes, and double nodes (Fig. 11).

It should be pointed out that short internodes and double nodes may occasionally be found in normal vines, but their frequency is usually much higher in the diseased vines. The double nodes and short internodes occur most frequently at the 8th to 11th internode spaces, and may repeat at intervals along the cane. Some canes become flat and branch at the internode space. In some varieties, diseased vines produce numerous side shoots and the vines appear bushy.

Flower clusters on fanleaf-diseased vines are often smaller than normal. They shell badly, and set very straggly bunches. In advanced cases the vines fail to set fruit. The clusters wither and dry up after bloom.

The *yellow mosaic* disease is characterized by yellow shoots that stand out in contrast to the normal green foliage in the early spring growth. The shoots, leaves, stems, and even the blossom clusters are yellow. The degree of yellowing will vary with the season, variety, and strain of the virus. Other symptoms associated with the disease are blossom shelling and leaf mottling of many kinds and degrees.

Leaves of diseased vines may show only one or several kinds of symptoms. Leaf mottling varies from a slight flecking of yellow or cream color about the small veins, to a pronounced clearing or yellowing along the large veins, and from a slight speckling and patterning of light or pale yellow to a complete yellowing (Fig. 13). As the leaves age, some yellow areas will become greener, and others will fade to a cream color that bleaches to nearly white. These white areas usually burn and dry up with the advancing season (Plate 2).

Although some vines have been found that do not develop symptoms each season, most of the yellow mosaic vines show symptoms every year.

Experimental work shows that the disease spreads slowly in the vineyard, from vine to vine in an expanding circular area. The virus is apparently retained in the soil. In several instances new healthy vines planted where diseased vines have been removed have contracted the disease. The manner in which the disease is spread has not been determined. It is assumed that the yellow mosaic is retained in the roots of the old vines left in the soil and transmitted from them to the roots of the new vines.

White Emperor, the grape that does not color, has been known for some time in the vineyards of the Red Emperor variety. This disease will transmit from white-fruited vines to red-fruited vines, causing the fruit to be white. The disease does not appear to spread naturally in California vineyards.

Symptoms show in the fruit and leaves. At maturity the fruit of diseased vines is usually low in sugar. It may vary in color from pale greenish or straw green to pink (Plate 1). Early in the season, leaves of diseased vines are usually darker and thicker than normal. They are wrinkled along the veins and the margins. Leaves curve downward or roll inward. As they age, they become reddish bronze, and the rolled margins become very prominent. The tissue between the large veins turns light as if scorched by the sun, while that next to the veins becomes reddish brown.

Pierce's disease is a killer of grapevines. It has been found in almost every vineyard district of California—except Coachella, Imperial, and Livermore valleys. The disease is still present. Though not as destructive as a few years ago, it still kills rather large numbers of vines each year. Pierce's disease is caused by a virus that attacks many host plants, including shrubs and grasses. It also causes alfalfa dwarf. The disease is spread naturally in California by several species of sharpshooter leafhoppers.

Scalding and burning of the leaves, the first symptoms, may develop any time after mid-June. Leaf scalding is characterized by a sudden drying of a part of the leaf while it is still green. Tissue around the



FIGURE 5. Leaves from Mission vine showing the diversity of fanleaf symptoms in this variety. (Refer also to Figure 7.)

margins and the tips of the large veins dries up and later turns brown. The size of the scalded areas varies from a small fraction to as much as half the leaf surface. Leaf burning, usually preceded by yellowing of the tissue before it dries and turns brown, starts about the margins and progresses, often in concentric zones, toward the base of the leaf at the point of attachment of the petiole (Fig. 12). In newly diseased vines, these symptoms frequently show on only one cane or on the canes growing from one arm or side of the vine. As the season advances,



FIGURE 6. Leaves from a fanleaf-diseased Thompson Seedless vine. The petiole sinus is nearly normal. Young leaves show different forms of mottling which become less distinct as they age.

the amount of leaf burning increases. Severely affected leaves drop, leaving the petiole attached to the cane.

Fruit on canes showing early leaf symptoms may be dwarfed and later become withered and dry. If leaf scalding occurs late in the season, the fruit may prematurely color and then wither and dry.

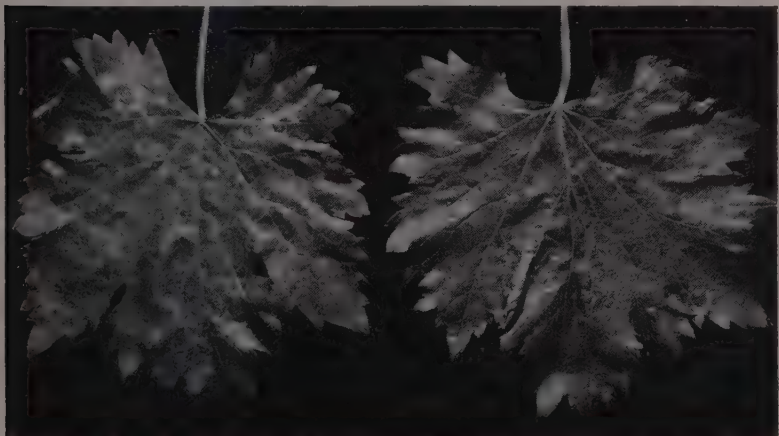


FIGURE 7. Leaves from the base of a cane of a fanleaf-diseased Mission vine. They were photographed with side lights to bring out the rough surface and pitting in the epidermis.



FIGURE 8. Shoots of French Colombard with fanleaf. The shoot on the left has double nodes, small flower clusters, leaves with very wide open petiole sinuses, leaf rolling and nettle leaf-like margins. The shoot on the right shows additional symptoms of fanleaf observed in this and other varieties.

The second and later seasons of the disease are characterized by delayed growth in the spring, followed by dwarfing of affected parts of the vines. The first four to eight leaves on the shoots growing from affected parts of diseased vines often show interveinal chlorosis or mottling and deformity. Mottling is more intense in the first leaf and becomes less so with each successive one formed on a shoot. As the season advances, the leaves on vines in the second year of disease will show scalding and burning and drop from the vine. Some canes in severely affected vines may die back from the tips. Much of the fruit withers and dries before harvest. Canes fail to mature evenly and have irregular patches of green bark in the portions that should mature to a normal brown.

Death of the root system of diseased vines follows closely the decline of the top.

VIRUS-LIKE DISEASES

This group of diseases is being studied in the disease experimental plot east of Davis. Causes of the diseases are not known, but the diseases display symptoms that could be caused by viruses. Since they are carried along in the propagating wood and show in new vines developed from it, they are classed here as virus-like diseases. Those pictured and discussed are: unfruitful vine, enation, asteroid leaf spot, rough bark, leaf roll, and spindle shoot. Little leaf, a zinc deficiency disease, is also illustrated because it has been confused with some of these diseases.

Unfruitful vines may be caused by some well known grape troubles, such as little leaf, sports, and fanleaf. In addition to these, there are unfruitful vine disorders that are different. Although the name unfruitful vines has been used simply for the lack of a better term, it is descriptive.

Wood from unfruitful vines will produce new vines that are also unfruitful, and in some cases when these vines have been successfully top worked with good wood, the new tops have become unfruitful.

The vines show different degrees of unfruitfulness, which vary with the seasons. They may show very straggly clusters with shot berries, or have no fruit at all. In such vines the flower clusters usually dry up after bloom.

Leaves formed at the bases of canes with the first flush of growth show mottling, speckling, and vein yellowing (Fig. 14 and Plate 2). These leaf symptoms have also been observed in leaves along the canes away from the base, but they occur most frequently at the first to tenth nodes.

Enation disease is characterized by the formation of leaf-like outgrowths on the lower surfaces of leaves, usually about the larger veins. Affected leaves occur mostly at the bases of shoots (Fig. 15). In addition to showing enations, the leaves may be distorted and puckered about the veins. Many leaves do not have enations, but are small, somewhat leathery, and thicker than normal.

Affected vines are often delayed in spring growth. Some of the shoot internodes are very short at the base and have a tendency to grow down, rather than upright. Diseased vines produce less fruit than do normal vines.



FIGURE 10. Shoots from the rootstock variety St. George with fanleaf. The basal leaves have very wide petiolar sinuses while the others show some mottling.

Asteroid-type leaf spot, or flecking, has been found in vines of several varieties. Tests are in progress to determine the nature of the disease. It resembles very much the so-called true mosaic of grapevines described in some European countries.



FIGURE 9. Symptoms of fanleaf in the variety Salvador. The leaves show marginal mottling, burning, rolling, flecking and chlorosis.



FIGURE 11. Dormant canes from a fanleaf-diseased French Colombard vine showing double nodes, short internodes, irregular branching. Such symptoms are occasional on normal vines, but become numerous on certain varieties with fanleaf. Cane at left is normal.

Symptoms are a clearing of the very small veins and the development of asteroid-like spots. The leaf tissues clear in irregular spots, radiating from a center (Fig. 16).

Rough bark has been observed in the varieties Palomino and Petite Sirah. The bark in the current season's wood splits into long longitudinal cracks which become pronounced fissures as the canes mature. As the wood ages the bark continues to split, acquiring a very rough appearance (Fig. 17). Such vines are less vigorous than normal.

Leaf roll suggests the most prominent symptom of this group of vine diseases. Leaves are often somewhat smaller than normal, puckered about the margins, and rolled downward. On some varieties they merely roll down about the margins, and there appears to be no marked reduction in leaf size. Vines with leaf roll are in general much less fruitful



FIGURE 13. Yellow Mosaic symptoms in leaves of Alicante Bouschet. The light areas in the leaves are varying shades of yellow to cream color. The yellowing frequently occurs as vein-banding.

than are normal ones. Leaf roll has been found in Thompson Seedless, Melon, Salvador, Sauvignon Vert, and French Colombard.

Thompson Seedless vines with leaf roll have been found in only a few vineyards (Fig. 18). The affected vines showed varying degrees of vigor and bore little or no fruit. Melon vines when affected with leaf roll become unfruitful and gradually decline (Plate 1).



FIGURE 12. Pierce's disease symptoms in the variety Petite Sirah. The leaf scalding and burning and the wilting and drying up of clusters are typical of the disease in mid- through late-season in many varieties of grapes.



FIGURE 14. Leaves showing symptoms found associated with a form of unfruitfulness in vines. The leaf in the upper right is from a Thompson Seedless vine. The other leaves are from Emperor vines. (Refer also to Plate 2.)

Spindle shoot, a form of leaf roll, is another one of the vine troubles that causes unfruitfulness. The stems are not truly spindly or small, but the shoots as a whole appear so because the leaves are small, puckered about the margins, and rolled downward (Fig. 19). Disorders of this type have been found principally in the varieties French Colombard, Salvador, and Tinta Madeira. These vines produce many side shoots along the canes and look brushy.

Little leaf, a zinc-deficiency disease, may be confused with some of these grape diseases, especially fanleaf. The leaf symptoms are particularly marked toward the tips of the canes and in lateral shoots. Leaves are small and show varying degrees of interveinal chlorosis. The chlorosis is usually more pronounced near the margins and between the large veins. In severe cases the leaves may be malformed, with a wide petiole sinus (Fig. 20). Canes may be small, with short internodes, and may produce numerous lateral shoots.



FIGURE 16. Asteroid type leaf spot symptoms on leaves of a shoot of Muscat Canelli. Symptoms of this type have been found on several varieties of grapes in California. Sometimes the spots are more numerous.



FIGURE 15. Symptoms of grape enation on a Tokay shoot. Note deformity of leaves, enations, or leaf-like outgrowths on the lower surface of some leaves (arrow), irregular growth and cracking of the bark in the shoot stem.



FIGURE 18. Leaf roll found in some Thompson Seedless vines that were growing on a strain of 1613 rootstock.

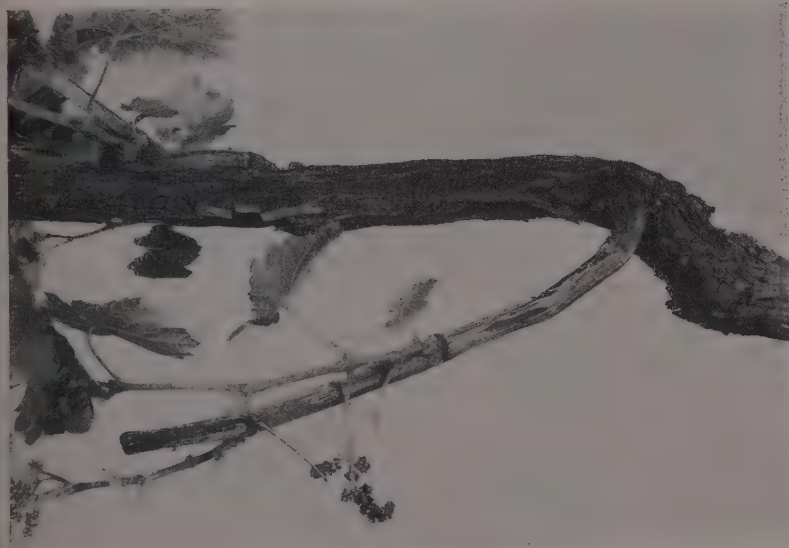


FIGURE 17. Symptoms of rough bark disease on the shoots, canes and trunk of a young vine, variety Palomino.



FIGURE 20. Little leaf symptoms of zinc deficiency in a shoot of Muscat of Alexandria. This shoot was included for comparison with the other grape diseases.

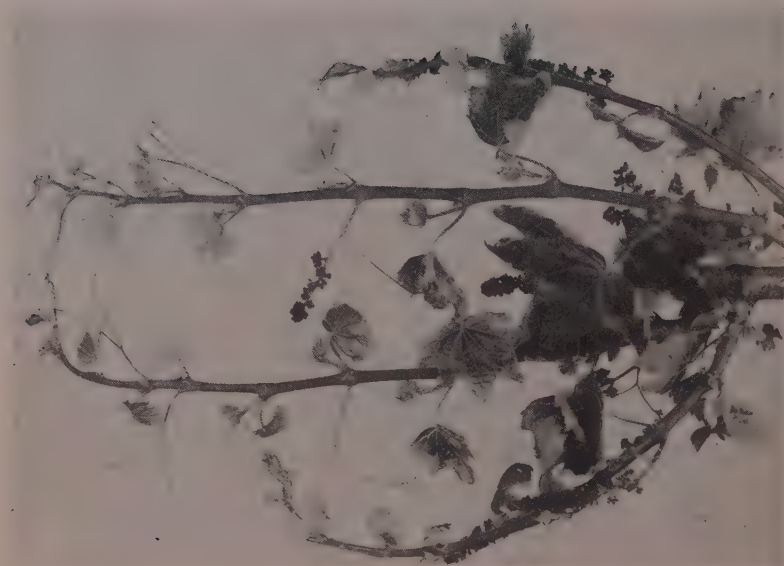


FIGURE 19. A spur of French Colombard with shoots from a vine with spindle shoot disease. The diameters of the shoot stems are not small, but the small, cupped leaves give the shoots the slim appearance.

COLORED TRANSPARENCIES PROVIDE EFFECTIVE COURT EVIDENCE IN STANDARDIZATION CASES

By PAUL K. WILSON, Deputy Agricultural Commissioner,
and NATHAN SWEET, Senior Agricultural Inspector, Los Angeles County
Agricultural Commissioner's Office

Colored transparencies have proved effective as evidence in fruit and vegetable standardization court cases prosecuted by the Los Angeles County agricultural commissioner's office. Courts and city prosecutors like this kind of evidence which has long been employed by some other agencies, including the police.

Our former procedure was to take evidence to a cold storage plant where it was frozen pending court arraignment. Often the interval between time the violation occurred and trial is weeks or even months if postponements are requested. After removal from storage, deterioration is rapid as the evidence thaws. Defense attorneys are quick to make a point of this, raising the question as to validity of the evidence.

In one instance, cantaloupes rejected for over-ripeness and internal breakdown were frozen pending trial. When removed and cut, the melons actually appeared more nearly normal inside than when rejected and were not suitable to introduce in court.

In preparing a court case, first hurdle in this county is a hearing in the city attorney's office, at which time evidence is presented in the presence of the defendant. Purpose is for a deputy in that department to determine whether evidence is sufficient to go to trial.

The following is an example of the value of colored pictures in this work. An inspector caught a wholesale dealer selling avocados in flats marked "Fuerte" and "Hass" when actually the fruit in most of the containers was the Dickinson variety. Dickinsons resemble Hass in color and skin texture but at the time were selling for about half as much per pound as the other two varieties. The Dickinsons, normally a low oil content fruit, also failed to meet the legal 8 percent oil content minimum. Slides presented to the deputy city attorney, a man not familiar with avocado varieties, enabled us to get a complaint as the colored pictures graphically identified the varietal characteristics of the different kinds involved. Had it not been for the pictures, the job of convincing the deputy would have been much more complicated. It was not necessary to present the pictures in court as the defendant entered a plea of guilty and was fined on mismarking and immaturity counts.

It is important to get pictures of the evidence on film at the time of the rejection or within a few hours and if possible, at the place of rejection. Close-up pictures are taken with special equipment, not practical for "In-the-field" photography. The camera we use is a German Exakta equipped with a Zeiss-Tessar f 2.8 lens. However, any good 35 mm.



FIGURE 1. Mismarked apples. Count markings changed from 113 size to 100 size. Picture shows standard 113 size pack: 23 apples top layer, 22 second, 23 third, 22 fourth, and 23 bottom layer. Note where bleach, used in erasing old size markings, ran down over the word "combination" and "fancy." The packer and brand name are not shown because the change in count was made in Los Angeles—not by the original packer.

camera would serve as well. Number 1 and 2 portrait lens, and 11 and 22 mm. extension tubes are used for close-up work. With this combination, defects can be photographed from a distance of a few inches to two feet. Flood lights, tripod, and neutral background coloring are essential for more careful exposure and composition of material than could be had in the field. Thirty-five mm. rolls of color film containing 20 exposures are used. These are projected in the cardboard mounts as returned to us by the photo laboratory.

Recent cases involved the changing of the count on apple boxes. Market inspectors discovered a dealer in the act of changing container markings of 113 size apples to 100, there being a better demand and price for the latter size. Equipment for altering the markings consisted of a bottle of Clorox, an ink-stained rag, a scraper, and the "100" size stamp. Also, there were the boxes of apples, some with changed and others with unchanged counts. Allowing nothing to be disturbed, all of the above was photographed. The colored transparency was effective even to the point of showing the difference in color of the ink used for the change-over compared with the original markings. Later, close-ups were taken of original and changed boxes to indicate pack and count detail.

This defendant was willing to admit to us he was responsible for this mismarking. Slides projected during the hearing gave him little to excuse his action. Without the presentation of visual evidence other defendants charged with the same offense have been reluctant to concede guilt in the presence of the city attorney. Generally, the knowledge that we have picture evidence encourages guilty pleas.

Cases involving deceptive displays or packs make good subjects for color photography. A retailer was cited for a hearing last summer for

a deceptive peach display. No complaint was issued by the city attorney for this violation. The case was put off calendar pending further violations. Two months later the same defendant was again cited to the city attorney's office for a deceptive display of tomatoes.

Both the peach and the tomato slides were used at the hearing and a two-count complaint was issued. The defendant pleaded not guilty on both counts. The slides proved invaluable when the case went to trial in municipal court. When a case is transferred from one court to another, as happened with this one, three or four hours elapse before trial. Frozen evidence would be difficult or impossible to hold for this length of time at room temperatures. Slides present no such problem. The defendant was found guilty on both counts and fined.

Aside from showing evidence, slides make testimony much easier. Defects are shown, can be pointed out and need not be described. Size variation is far more evident than when described by measurement. Passable and rejectable specimens are easily compared. Slides are viewed in court by projection or with a small viewer. Projection is preferable but some court rooms cannot be sufficiently darkened for good, clear pictures. In this case a viewer is best even though only one person can see at a time. Some of the advantage of pointing out defects is lost but not as much as with poor projection.

We have worked out the following procedure in taking pictures for evidence:

First: A picture of the entire display or lot, or sample from the display or lot should be taken. This should show the rejected produce as it was found—should include good specimens as well as bad. The all-over appearance is the important part of this view, rather than detail. Later individual specimens can be photographed singly or in small groups to show detail.

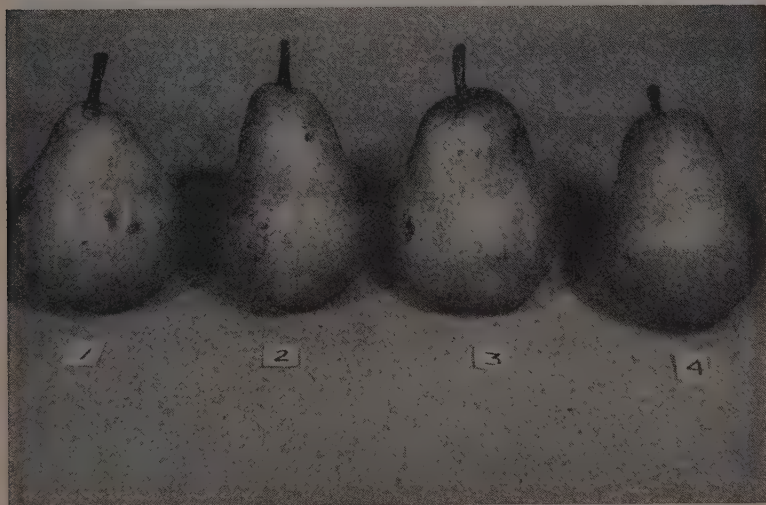


FIGURE 2. Bartlett pears photographed for possible court evidence. External view and identified by number.

Second: Adequate identification of evidence should be made by labels, showing defendant's name, violation number and date. Include signs, placards which give price, units in which produce is sold, the name of the store, stand or truck number, brand names, lot numbers or other marks that may help to show ownership. Any of the above items singly or together can make subsequent testimony easier and more convincing.

Third: Where individual specimens are to be photographed at close range to show detail, they should first be identified by number in the picture of the entire display. The numbered specimens will then be identified as being part of the original sample or display. Questions arising as to the validity may then be solved by referring back to the first picture. The close-up shots should include name, date, and violation number as well as their individual identification number. Complete identification of each slide will avoid the possibility of having the picture's validity questioned during the trial.

Fourth: Be sure all pictures represent accurately the fruit or vegetable taken in evidence—stress passable as well as rejectable specimens. To demonstrate defects compare good and bad examples from the lot in question. Do not substitute good specimens from a different source in the same picture with the evidence. If no passable examples are available from the evidence, try to have entirely different slides introduced for comparison purposes. Any substitution at the time of picture taking can cast doubt on the whole set of slides.

Finally: The photographer should take the pictures in the presence of the inspector who took the evidence. This ensures identification of the sample as well as assurance that pictures will be faithful to the original lot.

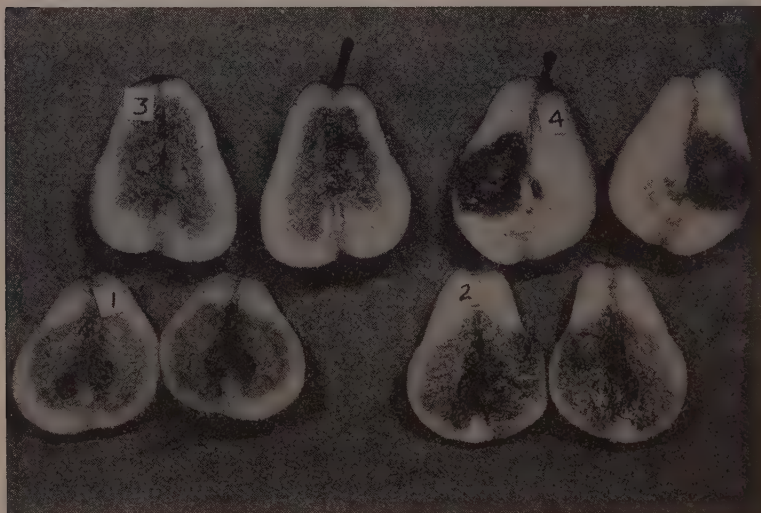


FIGURE 3. The same pears as Figure 2 cut to show internal breakdown. The numbers are to keep the identity between the cut and uncut samples.

CHRONIC RESPIRATORY DISEASE OF CHICKENS

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Chronic respiratory disease of chickens (CRD), commonly referred to as "air sac" or "air sac infection," is an infectious disease affecting primarily the respiratory organs in both laying and broiler birds. It may lead to a generalized infection of the body cavities but always begins as a respiratory infection. The disease is called chronic because it tends to follow a prolonged course extending over many weeks or months.

The infectious agent which is generally accepted as the primary cause of the disease is called a pleuropneumonia-like organism, or PPLO. This organism belongs to a group intermediate in size and other characteristics between bacteria and the filterable viruses. Many research workers have been unable to make any distinction between this organism and the organism causing infectious sinusitis of turkeys. It is characteristically an indolent and insidious parasite that lies dormant in the infected bird until its destructive activity is precipitated by the stress of a trying environment or by the appearance of some other infectious disease. Because of this, and inasmuch as the infection may persist for weeks and months, it is frequently seen in the field as part of a mixed infection. It is sometimes present in conjunction with infectious bronchitis, Newcastle disease, infectious laryngotracheitis or various worm or coccidial infestations, and very frequently with massive secondary bacterial invasions of the body cavities and all their associated organs. A latent infection may be activated by stresses following vaccination, rough handling of birds, hormone caponizing or inclement weather.

Uncomplicated cases of CRD do occur, but they remain uncomplicated only if no other infectious agent is able to take advantage of the debilitating effects of the CRD infection during its prolonged and indefinite course.

Loss of Appetite Initial Symptom

Symptoms: Usually the first symptom is a loss of appetite; this is not an invariable symptom but does occur in most cases. Next there are general respiratory symptoms which vary greatly in severity from one outbreak to the next, even on the same premises in different flocks . . . moist rattling sounds, discharge from the nostrils, sneezing and coughing. These respiratory symptoms are indistinguishable from those seen in other respiratory conditions; they may imitate infectious bronchitis, infectious laryngotracheitis, Newcastle disease, mycotic respira-

tory infection, and similar conditions. Some birds will show inflammation of the eye, sinusitis and nasal discharges indistinguishable from those seen in infectious coryza.

High mortality usually occurs only when the disease is complicated by secondary or concurrent infections. CRD usually results in a lingering, debilitated condition, poor growth, loss of weight, and, in layers, a 5 to 30 percent drop in egg production for variable periods. Generally the production rate is permanently affected to some degree.

Autopsy Findings Variable

Lesions: Autopsy findings are variable but primarily involve the respiratory organs. At first there is only an inflammation of the mucous membranes of the nasal passages and sinuses, trachea, bronchi and air sacs, with moderate deposits of excretory fluids and pus.

There are four distinct pairs of air sacs in the fowl and one single one. These are part of a system of air spaces lined with a thin, transparent, double-walled membrane in contact with the bird's internal organs and extending into the hollow bones, between the muscles and under the skin. These sacs are continuous with air passages of the lungs.

In the later stages of CRD infection, some or all of the air sacs often become distended with cheese-like deposits of pus or thick mucoid exudate and the air sac walls are thickened and more inflamed. In advanced cases these deposits are found in the peritoneal cavity, over the surface of any of the abdominal organs, principally the liver, sometimes extensively involving the heart sac. Much of this may be caused by secondary bacterial infection.

Field Diagnosis Only Tentative

Diagnosis: Chronic respiratory disease cannot be diagnosed in the field except on a tentative basis. It is necessary to take all available information into consideration. A study of the general flock appearance must be made, a careful history of the course of the outbreak considered, and laboratory diagnostic facilities used. Concurrent infections, frequently present in these cases, must be identified and their relative importance determined.

The symptoms and lesions described above can be used only as a general guide in making a diagnosis.

The ways in which CRD is transmitted from one bird to another are not well known. It seems probable that the infection is transmissible on contact between infected and susceptible birds, but the degree of this transmissibility may be influenced greatly by other factors such as management, climatic conditions, the presence of other diseases, the particular strain of PPLD agent involved and the kinds of bacterial flora present. There is some evidence to indicate that the infection may be transmitted from adult stock via the egg, but how often this occurs is not known. It is advisable in any case to keep infected groups of birds as well isolated as possible, and in some cases to dispose of them for the protection of other flocks on the premises.

Some birds may in time develop a degree of resistance to the infection after they have been exposed and still have the ability to lay eggs at a profitable rate; however, vigorous culling is necessary to insure

good flock production. It is best to dispose of badly infected flocks when a good culling program cannot be maintained. After the removal of an infected flock the houses and equipment should be thoroughly cleaned and disinfected.

Poor Appetites Can Be Stimulated

Treatment: In most instances affected flocks show poor appetites. One of the least expensive, least troublesome and most effective ways of stimulating feed consumption is by moistening the top layer of mash in the feed trough with either water or milk.



FIGURE 1. Pullet with severe air sac infection showing typical attitude

The use of antibiotics such as Aureomycin and Terramycin in the drinking water or feed frequently results in some improvement in the condition of affected flocks, particularly when such treatment is started early. The results of late treatment may be very discouraging. The intramuscular or subcutaneous injection of antibiotics singly and in combinations has also been used with beneficial effect in some cases. It is always well to follow the directions of a veterinarian or of the manufacturer when using these drugs. An affected flock may fail to respond, after any of these treatments, or may show temporary improvement and then relapse. Retreatment is feasible in some flocks but not in others, depending upon the condition of the flock, the type of enterprise, and economic considerations.

Personal experience, maximum utilization of professional advice and an effort to keep abreast of latest developments coupled with calm and conservative judgment are the poultryman's best defense against chronic respiratory disease.

CURRENT INSECT NOTES

H. M. ARMITAGE, Chief, Bureau of Entomology
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Insect and mite species of potential economic importance recently found in California for the first time, but not previously reported, are here recorded. Also, as in the past, there are a number of instances here reported, in which species of limited distribution have extended their range in the State.

On April 22, 1951, J. S. Rowell, County Agricultural Inspector, submitted larval specimens of a sawfly found on wheat in the Cuyama Valley in eastern Santa Barbara County. They were tentatively determined by department taxonomists as representing a species of *Pachynematus* a group commonly associated with wild grasses. In the absence of male adults specific identification was not possible. There were certain elements in the finding suggesting the species as one not previously reported in the State, though the fact that we have 18 species in this group in California seemed to minimize its importance.

In 1952 its activity apparently went unobserved. In the spring of 1953, however, there was a flare-up in the infestation in the area where the original specimens were collected, which subsequently resulted in an estimated 200 acres of wheat being cut down to two-inch stubble by the feeding of the larvae. Again this situation was observed too late in the season to secure adult males, which apparently are present for a very short time early in the season immediately following emergence from over-wintering pupae in the soil. An effort to break this diapause during the winter of 1953 and secure adults for identification ahead of normal emergence was unsuccessful. In March, 1954, there was indication of an epidemic outbreak over a much wider area. Out of several hundred adults collected less than a dozen males were secured. From these a positive identification as *Pachynematus sporax* (Ross) was secured through Dr. W. W. Middlekauf of the University of California. This was later confirmed by Dr. Paul Oman of the Office of Insect Identification of the United States Department of Agriculture and by Dr. Herbert Ross of the Illinois Natural History Survey Division, who described the species in 1945.

The history developed by Dr. Ross at the time of describing showed the species to occur from Saskatoon, Canada, on the north to Medford, Oregon, on the south, extending eastward into Idaho. Apparently it was first found at Pullman, Washington, in 1907 and again at Medford in 1917. Later collections in Canada and Idaho were made in 1937 and 1939. The type specimens are shown as taken at Parma, Idaho, in 1937. The finding in California would appear to be a southward extension

in range of a native species though the jump from Medford to Cuyama would appear to be a very long one.

Wheat has been grown in the Cuyama Valley for over 75 years without previous record of the presence of this species. Survey of other potential hosts in the valley show it to be apparently restricted to wheat. Current survey has so far failed to show its presence in adjacent valleys given over entirely to the production of wheat, or associated with wheat in any other part of the State. While it is entirely possible that the present situation may represent a flare-up in a native species due to unusually favorable conditions, common to species of this group in general, at the same time it seemed in order to take measures to hold down the populations and discourage outward spread, to permit opportunity for its further study. In cooperation with Walter Cummings and Thomas Chalmers, Agricultural Commissioners of Santa Barbara and San Benito Counties respectively, such measures were carried out during the week of April 17th during which approximately 12,000 acres of contiguous open wheat land in the eastern end of the valley was sprayed using one pound of DDT in two gallons of diesel type oil per acre. Previous tests made by the University of California had shown DDT effective for this purpose.

The area treated included all infestation which could be found plus an extended peripheral area for safety. The results obtained both through direct contact at time of application and later residual effects have been excellent and close to 100 percent of the larval stage. Adults have apparently completed their cycle in this one generation species. Intensive search is planned for native host plants that might have been responsible for this problem as has state-wide survey for possible infestation in other areas as a basis for determining what future action should be taken, if any.

On February 24, 1954, specimens of an Eriophyid mite were received at Sacramento for identification, from Dr. D. W. Ricker, Citrus Experiment Station, which he reported had been collected on avocado at Ventura. These were identified by Hartford Keifer, department taxonomist as representing a new species *Calepitrimerus muesebecki* (Keifer) which he described from Florida specimens, also on avocado, in 1940. The only other records covering this species represent material collected by C. A. Fleshner, of the Citrus Experiment Station, Riverside, at Mt. Carpentera, Tres Rios, Costa Rica on November 18, 1953, and at Huatusco, Mexico, on February 9, 1954. The infestation so far recorded at Ventura on the basis of a preliminary survey is restricted to a small planting of avocado trees on the grounds of the Ventura Junior College. The trees are approximately 20 years old with no history so far available as to their origin. There is no record of the introduction of any foreign budwood to the planting. At present the trees are given over to experimental use by the University of California. Infestation seems to be heaviest on a single tree in the center of a block that has received several experimental applications of several types of miticides by the university. According to Agricultural Commissioner C. J. Barrett, there is no evidence of host injury excepting



Wheat sawfly (*Pachynematus sporax*) Cuyama Valley, Santa Barbara County. Right, female; left, male. Photograph, California Department of Agriculture.

a slight russeting along the midrib of the foliage. Early intensive survey is planned in cooperation with the university and the agricultural commissioners to determine the extent of its occurrence before recommending any remedial action.

In the July-August-September, 1953, issue of the department *Bulletin* the finding of the Stellata oak phylloxera on an undescribed species of scrub oak, by R. J. Buckner, San Diego County Agricultural Inspector, was reported at several locations in the City of San Diego. It has since been determined that the host to which infestation seems to be restricted is *Quercus dumosa*. It also appears that this host in the scrub stage is limited to the City of San Diego and of very limited occurrence in that area. Light infestation clearly restricted to specific areas of the host tree were found at locations two miles distant from the original finding. Apparent widespread distribution where its host occurs and lack of any indicated economic importance has precluded any remedial measures being taken.

The first recorded occurrence of the carnation budmite, *Aceria paradianthi* (K) in San Bernardino County at Redlands is recorded on the basis of specimens submitted to Sacramento on March 11, 1954, by Roy Camblin and Gene Harper, county agricultural inspectors. The nearest previous reported occurrence was at Sierra Madre in Los Angeles County, 51 miles to the west, on March 24, 1952.

On March 11, 1954, State Survey Entomologist R. P. Allen, submitted specimens for identification of Destefan's scale, *Lepidosaphes destefanii* from a location in Sonoma County, indicating outward spread on roadside olive trees extending one-half mile to the north and a similar distance to the south of Cloverdale to which known occurrence has so far been restricted, with a light infestation in an abandoned orchard at Geyserville, three miles farther to the south. So far infestation has been restricted to olive in California with no history of its origin or suggestion as to when it might have been introduced. There still is no evidence that it is of economic importance though it belongs to a genus having such status. The general situation has so far depreciated the need of any intensive remedial measures.

Reporting new infestation of olive parlatoria scale, *Parlatoria oleae* might seem no longer necessary in view of its fairly widespread distribution throughout most of the State. However, there are still several counties, particularly in the northern and central coastal part of the State, where it is not yet known. Its recent finding during general survey by Butte County Agricultural Inspectors Martin Glynn and Paul Hart at Biggs on March 24, 1954, and at Gridley on April 13, 1954, would seem to merit recording. The hosts involved were rose in the first instance and plum and apple in the second case. Commissioner Fred Platt states that the infestations are incipient in nature and that he plans intensive measures designed to accomplish their elimination.

Specimens of the brown banded roach, *Supella Supellectilium* were submitted for identification by County Agricultural Inspector Melville Newfield on November 11, 1953, from a Sacramento location. This species has been previously reported only from San Bernardino, Santa Barbara and Butte Counties.

The azalea aphid, *Amphorophora azaleae*, was reported for the first time in California at Bakersfield in Kern County as the result of specimens collected by County Agricultural Inspectors L. Hellwig and B. Edwards on March 26, 1954. They were found in a local nursery infesting azaleas which had originated with a nursery in Monrovia, Los Angeles County. Subsequent inspection by Los Angeles County Inspector V. Daniels has shown it to be quite widely distributed on that host in local nurseries. It would therefore seem not to merit any intensive remedial measures.

CALIFORNIA FRUIT AND NUT CROP ACREAGE ESTIMATES AS OF 1953

By R. E. BLAIR and HARRY FRIESEN

The trend of the gradual decrease of acreage devoted to fruit and nut crops in California continued from 1952 into 1953. Some of the older and less productive acreages were removed but much of the reduction was because of the continued diversion of lands to residential and industrial uses, in keeping with the continued expansion of California population.

This report shows an inventory of perennial fruit and nut crop acreages by counties in California as of 1953, and is presented on a basis of the principal varieties as commercially grown. On a state basis, the principal varieties as commercially grown, and grouped by ages, are also shown. The combined acreage of all these crops in 1953 totaled 1,409,536 acres, of which 1,306,054 acres were classed as bearing and 103,482 as nonbearing. These crops account for more than one and one-third million acres, and include many of the outstanding agricultural industries that have for many years made California well known around the world. These data are of much concern to various groups within the State as well as to many outside of the California boundaries since California usually accounts for about one-half of the entire national production of all fruit and nut crops.

Of the nonbearing acreages indicated by the summary, 14,612 acres were planted in 1953. The larger portion of these new plantings consisted of 10 crops. Those that exceeded 1,000 acres include clingstone peaches, freestone peaches, walnuts, lemons and raisin variety grapes. New plantings of plums, prunes, almonds, Bartlett pears and avocados each exceeded 500 acres.

This report summarizes the most recent tabulations of county data as relating to acreages standing in 1953. For many years California fruit and nut crop acreage estimates have been provided annually through a cooperative undertaking between the respective county agricultural commissioners and the California Crop and Livestock Reporting Service,¹ partially from new enumerations and partly by recording changes from the previous year. Beginning in 1948 and continuing through the following years, complete enumerations of commercial acreages have been made in many counties with the use of funds available through research and marketing administration projects. In accomplishing this, federal funds were matched by the State and some of the counties.

These records are on about the same basis as similar reports for the past four years. However, estimates from 1949 to 1953 may not be

¹ The California Crop and Livestock Reporting Service is conducted jointly by the Agricultural Marketing Service of the United States Department of Agriculture and the California Department of Agriculture.

wholly comparable with those of earlier years, on account of the results of new and more exact surveys that have been completed since 1948 in various important fruit and nut producing counties. Each county cannot be resurveyed each year on account of limited funds, but such surveys have been rotated among the several counties of the State. For intervening years efforts are made to determine acreage changes through records of plantings and removals.

There are 25 separate tree and vine crops included in this survey, which are further segregated into 164 individual varieties or varietal groups. The major changes from a previous year include: acreages removed or abandoned, new plantings made, and the shifting from a nonbearing position to bearing. Bearing and nonbearing acreage segregations as used in this report have been arbitrarily established on a basis of age. There is, of course, no exact first bearing age that would apply to all trees of a variety of any of these crops in a county, but a careful effort has been made to adopt the most probable average period required for a new planting to come to production in each county.

In comparison of state totals there are always year to year differences of bearing acreage but small changes do not portend important changes of potential production. The significant increases of bearing acreages from 1952 to 1953 included raisin variety grapes, walnuts, avocados, and clingstone peaches. Those fruit crops showing the greatest decline of bearing acreage in 1953 as compared to 1952 included oranges, wine and table variety grapes, Gravenstein apples, prunes and plums. Some of the wine grape, Gravenstein apple and prune acreage reductions include abandoned acreages that have not yet been pulled.

The second series of tables in this report record acreage data as standing in 1953, relating to the principal varieties of each crop and by date of planting. These data are on the basis of state totals.

STATE TOTALS CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES AS OF 1953

	Bearing	Nonbearing	Total	New plantings 1953 ¹
Almonds.....	91,991	10,479	102,470	688
Apples—Gravenstein.....	5,727	80	5,807	19
Apples—Others.....	18,064	2,349	20,413	257
Apples—All.....	23,791	2,429	26,220	276
Apricots.....	42,952	1,060	44,012	187
Avocados.....	15,072	7,034	22,106	551
Cherries—Royal Ann.....	2,952	736	3,688	45
Cherries—Others.....	6,453	1,143	7,596	287
Cherries—All.....	9,405	1,879	11,284	332
Chestnuts.....	244	13	257	-----
Dates.....	4,915	171	5,086	-----
Figs—Kadota.....	5,177	28	5,205	-----
Figs—Others.....	20,241	1,219	21,460	18
Figs—All.....	25,418	1,247	26,665	18
Filberts.....	34	5	39	2
Grapes—Raisin varieties.....	223,676	5,552	229,228	1,122
Grapes—Table varieties.....	83,894	2,376	86,270	340
Grapes—Wine varieties.....	146,005	2,528	148,533	483
Grapes—All.....	453,575	10,456	464,031	1,945
Grapefruit.....	9,110	608	9,718	145
Lemons.....	54,759	5,986	60,745	1,213
Limes.....	266	15	281	3
Nectarines.....	2,557	1,753	4,310	467
Olives.....	27,576	3,046	30,622	35
Oranges—Navel and miscel- laneous.....	72,610	2,048	74,658	425
Oranges—Valencia.....	121,165	1,438	122,603	32
Oranges—All.....	193,775	3,486	197,261	457
Peaches—Clingstone.....	47,441	9,250	56,691	2,776
Peaches—Freestone.....	31,879	7,081	38,960	1,617
Peaches—All.....	79,320	16,331	95,651	4,393
Pears—Bartlett.....	34,147	3,878	38,025	566
Pears—Others.....	4,658	290	4,948	19
Pears—All.....	38,805	4,168	42,973	585
Pecans.....	584	51	635	-----
Persimmons.....	639	59	698	2
Plums.....	21,965	3,155	25,120	898
Pomegranates.....	441	105	546	21
Prunes.....	94,614	6,391	101,005	827
Quinces.....	185	2	187	-----
Walnuts.....	114,061	23,553	137,614	1,567
Totals.....	1,306,054	103,482	1,409,536	14,612

¹ 1953 plantings included in 1953 nonbearing acreage.

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES AS OF 1953—STATE AND COUNTY SUMMARY
TOTAL ACRES BY CROP GROUPS

County	Principal deciduous tree fruits ¹	Citrus ²	Other tree fruits ³	Nuts ⁴	All grapes ⁵	Total
Del Norte.....	16					16
Humboldt.....	87		1	69	3	160
Mendocino.....	4,051	2	8	676	6,722	11,459
Shasta.....	264		839	87	36	1,226
Siskiyou.....	71			5	2	78
Trinity.....	42			87		129
Lassen.....	67					67
Modoc.....	20					20
Plumas.....	16					16
Alameda.....	3,574	7	25	1,296	3,027	7,929
Contra Costa.....	7,018	1	85	23,271	3,513	33,888
Lake.....	5,015		1	6,398	159	11,573
Marin.....	168			88	178	434
Monterey.....	2,616		3	2,614	119	5,252
Napa.....	9,903	5	70	1,996	10,625	22,599
San Benito.....	8,729		1	2,095	1,186	12,011
San Luis Obispo.....	870	1	3	9,415	707	10,996
San Mateo.....	165			121	13	299
Santa Clara.....	70,540	29	42	9,375	5,150	84,936
Santa Cruz.....	12,560	7	33	99	572	13,271
Sonoma.....	28,908	10	53	1,742	11,866	42,579
Butte.....	7,037	871	5,168	19,912	120	33,108
Colusa.....	3,826	13	46	11,104	122	15,111
Glenn.....	2,273	775	1,049	5,639	81	9,817
Sacramento.....	5,586	376	1,409	2,365	2,037	11,773
Solano.....	15,099	5	122	2,905	690	18,821
Sutter.....	22,092	3	68	12,165	90	34,418
Tehama.....	3,500	28	3,597	4,037	85	11,247
Yolo.....	4,067	19	828	10,280	311	15,505
Yuba.....	6,119	2	827	1,719	42	8,709
Fresno.....	17,210	3,636	15,823	3,283	162,787	202,739
Kern.....	2,271	1,278	323	141	26,647	30,660
Kings.....	2,661		398	916	5,230	9,205
Madera.....	2,031		2,483	530	18,009	23,053
Merced.....	8,217	10	7,770	11,830	15,274	43,101
San Joaquin.....	16,966		864	23,955	55,284	97,069
Stanislaus.....	22,789	4	523	18,772	16,273	58,361
Tulare.....	17,935	35,910	10,398	9,776	66,002	140,021
Alpine.....	6					6
Amador.....	174		6	247	711	1,138
Calaveras.....	152	1	263	623	217	1,256
El Dorado.....	4,657			167	79	4,903
Inyo.....	62		35		17	114
Mariposa.....	431		1			432
Mono.....	3					3
Nevada.....	1,231			25	73	1,329
Placer.....	16,500	30	383	369	1,111	18,393
Sierra.....	9					9
Tuolumne.....	634			41	4	679
Imperial.....	2	1,935	196	148	1,220	3,501
Los Angeles.....	1,809	38,720	4,479	8,960	1,307	55,275
Orange.....	82	57,959	2,955	970	44	62,010
Riverside.....	4,868	24,312	6,454	5,845	12,700	54,179
San Bernardino.....	3,174	38,619	695	2,673	29,653	74,814
San Diego.....	1,269	11,497	14,439	1,050	3,726	31,981
Santa Barbara.....	172	9,339	1,512	2,961	16	14,000
Ventura.....	1,261	42,601	1,632	18,173	191	63,858
STATE.....	350,675	268,005	85,910	241,015	464,031	1,409,536

¹ Includes apples, apricots, cherries, nectarines, peaches, pears, plums, prunes.² Includes grapefruit, lemons, limes, oranges.³ Includes avocados, dates, figs, olives, persimmons, pomegranates, quinces.⁴ Includes almonds, chestnuts, filberts, pecans, walnuts.⁵ Includes raisin, table, and wine varieties.

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953

County	APPLES—GRAVENSTEIN			APPLES—OTHERS			APPLES—ALL	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte				10	3	13	10	3
Humboldt	3		3	60		60	63	
Mendocino	65		65	826	40	866	891	40
Shasta				121	21	142	121	21
Siskiyou				30		30	30	
Trinity				12		12	12	
Lassen				20	1	21	20	1
Modoc				20		20	20	
Plumas				16		16	16	
Alameda	1		1	9		9	10	
Contra Costa	8		8	24		24	32	
Lake				8	8	16	8	8
Marin	18	1	19	10		10	28	1
Monterey	1		1	608	159	767	609	159
Napa	44		44	76		76	120	
San Benito				217	21	238	217	21
San Luis Obispo	4		4	151	30	181	155	30
San Mateo	1		1	49	9	58	50	9
Santa Clara				160	33	193	160	33
Santa Cruz	152	3	155	8,843	728	9,571	8,995	731
Sonoma	5,393	75	5,468	2,933	509	3,442	8,326	584
Butte	7		7	562	35	597	569	35
Colusa				3		3	3	
Glenn								
Sacramento				3		3	3	
Solano	4		4	2		2	6	
Sutter	4		4	26		26	30	
Tehama				103	8	111	103	8
Yolo								
Yuba								
Fresno				136	7	143	136	7
Kern				32	2	34	32	2
Kings								
Madera				65	6	71	65	6
Merced								
San Joaquin				12		12	12	
Stanislaus				1		1	1	
Tulare				209	54	263	209	54
Alpine				6		6	6	
Amador				32		32	32	
Calaveras	3		3	95	38	133	98	38
El Dorado	1		1	252	55	307	253	55
Inyo				55		55	55	
Mariposa				212	207	419	212	207
Mono				2		2	2	
Nevada	2		2	136	29	165	138	29
Placer	5		5	85	9	94	90	9
Sierra				9		9	9	
Tuolumne				547	28	575	547	28
Imperial								
Los Angeles	7		7	178	12	190	185	12
Orange				1		1	1	
Riverside		1	1	48	18	66	48	19
San Bernardino	4		4	531	137	668	535	137
San Diego				357	115	472	357	115
Santa Barbara				60	17	77	60	17
Ventura				101	10	111	101	10
STATE	5,727	80	5,807	18,064	2,349	20,413	23,791	2,429

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	APRICOTS			NECTARINES		
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total
Del Norte.....						
Humboldt.....						
Mendocino.....	2		2			
Shasta.....	1		1			
Siskiyou.....						
Trinity.....						
Lassen.....						
Modoc.....						
Plumas.....						
Alameda.....	2,879	78	2,957			
Contra Costa.....	3,156	24	3,180	105	5	110
Lake.....	3		3			
Marin.....	12		12			
Monterey.....	1,382	3	1,385			
Napa.....	42		42			
San Benito.....	4,232	137	4,369			
San Luis Obispo.....	156	12	168			
San Mateo.....	6		6			
Santa Clara.....	14,949	299	15,248			
Santa Cruz.....	426	1	427			
Sonoma.....	10		10			
Butte.....	35		35	19		19
Colusa.....	205		205			
Glenn.....	246		246			
Sacramento.....	40		40	1		1
Solano.....	4,013	91	4,104			
Sutter.....				46		46
Tehama.....	117		117	5	4	9
Yolo.....	1,927	50	1,977	3		3
Yuba.....	2		2	6	21	27
Fresno.....	810	1	811	869	806	1,675
Kern.....	130	3	133			
Kings.....	525	9	534	50	29	79
Madera.....	105		105	77		77
Merced.....	354	2	356	78	129	207
San Joaquin.....	1,110	90	1,200	79	80	159
Stanislaus.....	2,196	83	2,279	190	124	314
Tulare.....	152		152	1,012	533	1,545
Alpine.....						
Amador.....						
Calaveras.....	1	1	2			
El Dorado.....				4		4
Inyo.....						
Mariposa.....						
Mono.....						
Nevada.....						
Placer.....	8	1	9	3		3
Sierra.....						
Tuolumne.....						
Imperial.....	2		2			
Los Angeles.....	198		198	10	11	21
Orange.....	12		12		6	6
Riverside.....	2,256	158	2,414		5	5
San Bernardino.....	81	5	86			
San Diego.....	108		108			
Santa Barbara.....	42	12	54			
Ventura.....	1,021		1,021			
STATE.....	42,952	1,060	44,012	2,557	1,753	4,310

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	CHERRIES—ROYAL ANN			CHERRIES—OTHERS			CHERRIES—ALL	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....				2		2	2	
Mendocino.....	3		3	4		4	7	
Shasta.....				8		8	8	
Siskiyou.....	2		2	8		8	10	
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....	282	12	294	135		135	417	12
Contra Costa.....	7	7	14	140	111	251	147	118
Lake.....								
Marin.....								
Monterey.....	4		4	128		128	132	
Napa.....	20	4	24	39	30	69	59	34
San Benito.....				40	2	42	40	2
San Luis Obispo.....				4		4	4	
San Mateo.....								
Santa Clara.....	814	467	1,281	1,858	429	2,287	2,672	896
Santa Cruz.....	107		107	174	2	176	281	2
Sonoma.....	446	49	495	69	15	84	515	64
Butte.....	4		4	6		6	10	
Colusa.....								
Glenn.....				5		5	5	
Sacramento.....	20		20	48		48	68	
Solano.....	46	2	48	271	10	281	317	12
Sutter.....	21	14	35	123		123	144	14
Tehama.....	2		2	4	1	5	6	1
Yolo.....				12		12	12	
Yuba.....	4	2	6	15	9	24	19	11
Fresno.....					10	10		10
Kern.....					1	1		1
Kings.....								
Madera.....								
Merced.....								
San Joaquin.....	1,099	173	1,272	2,731	441	3,172	3,830	614
Stanislaus.....	23	4	27	44		44	67	4
Tulare.....				1		1	1	
Alpine.....								
Amador.....				1		1	1	
Calaveras.....					2	2		2
El Dorado.....	6		6	114	3	117	120	3
Inyo.....								
Mariposa.....								
Mono.....								
Nevada.....				9		9	9	
Placer.....	6		6	81	4	85	87	4
Sierra.....								
Tuolumne.....								
Imperial.....								
Los Angeles.....	1		1	37	8	45	38	8
Orange.....								
Riverside.....	26	1	27	306	52	358	332	53
San Bernardino.....	2	1	3	23	12	35	25	13
San Diego.....								
Santa Barbara.....	7		7	13	1	14	20	1
Ventura.....								
STATE.....	2,952	736	3,688	6,453	1,143	7,596	9,405	1,879

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	PEACHES—CLINGSTONE			PEACHES—FREESTONE			PEACHES—ALL	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte					2	2		2
Humboldt				15		15	15	
Mendocino				11	3	14	11	3
Shasta	2		2	24	2	26	26	2
Siskiyou	8		8	8		8	16	
Trinity				25		25	25	
Lassen	1		1	44		44	45	
Modoc								
Plumas								
Alameda				4		4	4	
Contra Costa	73	3	76	688	215	903	761	218
Lake				1	8	9	1	8
Marin	1		1	2		2	3	
Monterey				29		29	29	
Napa	47	4	51	68	5	73	115	9
San Benito	27		27	13		13	40	
San Luis Obispo				14	22	36	14	22
San Mateo				7		7	7	
Santa Clara	129		129	155	15	170	284	15
Santa Cruz	2		2	24		24	26	
Sonoma	26	3	29	29	8	37	55	11
Butte	2,441	272	2,713	384	23	407	2,825	295
Colusa	4		4	4		4	8	
Glenn				136		136	136	
Sacramento	222	3	225	74		74	296	
Solano	5		5	2,911	233	3,144	2,916	233
Sutter	13,166	1,182	14,348	279	11	290	13,445	1,193
Tehama	11	4	15	613	266	879	624	270
Yolo	61		61	468	47	515	529	47
Yuba	2,039	1,507	3,546	84		84	2,123	1,507
Fresno	477	19	496	7,484	2,424	9,908	7,961	2,443
Kern	9	1	10	127	64	191	136	65
Kings	491	73	564	1,181	155	1,336	1,672	228
Madera	295	160	455	1,003	40	1,043	1,298	200
Merced	3,233	910	4,143	2,591	782	3,373	5,824	1,692
San Joaquin	5,809	1,535	7,344	2,099	352	2,451	7,908	1,887
Stanislaus	13,893	3,111	17,004	2,522	543	3,065	16,415	3,654
Tulare	3,542	303	3,845	4,807	1,274	6,081	8,349	1,577
Alpine				19		19	19	
Amador								
Calaveras					2	2		2
El Dorado	73		73	35		35	108	
Inyo	2		2	5		5	7	
Mariposa				2		2	2	
Mono								
Nevada				7		7	7	
Placer	501	34	535	356	312	668	857	346
Sierra								
Tuolumne								
Imperial								
Los Angeles	37		37	758	37	795	795	37
Orange				34	18	52	34	18
Riverside	297	84	381	1,084	41	1,125	1,381	125
San Bernardino	517	41	558	1,236	71	1,307	1,753	112
San Diego		1	1	322	105	427	322	106
Santa Barbara				16	1	17	16	1
Ventura				77		77	77	
STATE	47,441	9,250	56,691	31,879	7,081	38,960	79,320	16,331

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	PEARS—BARTLETT			PEARS—OTHERS			PEARS—ALL	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....	2		2	1		1	3	
Mendocino.....	2,084	133	2,217	22	2	24	2,106	135
Shasta.....	2		2	1		1	3	
Siskiyou.....	4		4	11		11	15	
Trinity.....	5		5				5	
Lassen.....				1		1	1	
Modoc.....								
Pumas.....								
Alameda.....	43		43	5		5	48	
Contra Costa.....	1,921	34	1,955	147	25	172	2,068	59
Lake.....	3,798	416	4,214	5	45	50	3,803	461
Marin.....	104		104				104	
Monterey.....	13		13	116		116	129	
Napa.....	891	41	932	8	1	9	899	42
San Benito.....	251	39	290	485	11	496	736	50
San Luis Obispo.....	215	105	320	2		2	217	105
San Mateo.....	24	6	30	13		13	37	6
Santa Clara.....	4,215	514	4,729	2,061	120	2,181	6,276	634
Santa Cruz.....	622	30	652	305	31	336	927	61
Sonoma.....	1,785	153	1,938		3	3	1,785	156
Butte.....	38		38	5		5	43	
Colusa.....	7		7				7	
Glenn.....	95	44	139	107		107	202	44
Sacramento.....	4,040	289	4,329	185	2	187	4,225	291
Solano.....	2,397	136	2,533	187		187	2,584	136
Sutter.....	184	7	191		18	18	184	25
Tehama.....	8		8				8	
Yolo.....	378	22	400				378	22
Yuba.....	755	12	767	95		95	850	12
Fresno.....	24		24	1		1	25	
Kern.....	93		93				93	
Kings.....								
Madera.....								
Merced.....	2		2				2	
San Joaquin.....	85	43	128	5		5	90	43
Stanislaus.....	16		16	2		2	18	
Tulare.....	11		11	2		2	13	
Alpine.....								
Amador.....								
Calaveras.....	7	1	8				7	1
El Dorado.....	3,480	65	3,545	408		408	3,888	65
Inyo.....								
Mariposa.....	8	1	9				8	1
Mono.....				1		1	1	
Nevada.....	932	17	949	56		56	988	17
Placer.....	4,861	1,742	6,603	388	26	414	5,249	1,768
Sierra.....								
Tuolumne.....	50		50	9		9	59	
Imperial.....								
Los Angeles.....	424	16	440	9		9	433	16
Orange.....								
Riverside.....	15		15				15	
San Bernardino.....	34	4	38	3		3	37	4
San Diego.....	173	6	179	12	6	18	185	12
Santa Barbara.....	1		1				1	
Ventura.....	50	2	52				50	2
STATE.....	34,147	3,878	38,025	4,658	290	4,948	38,805	4,168

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	PLUMS			PRUNES		
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total
Del Norte.....				1		1
Humboldt.....	1		1	3		3
Mendocino.....	29	2	31	779	46	825
Shasta.....				82		82
Siskiyou.....						
Trinity.....						
Lassen.....						
Modoc.....						
Plumas.....						
Alameda.....	13		13	110	3	113
Contra Costa.....	162		162	163		163
Lake.....				645	78	723
Marin.....				20		20
Monterey.....	72	1	73			
Napa.....	4	14	18	8,025	540	8,565
San Benito.....	3	2	5	3,106	143	3,249
San Luis Obispo.....		3	3	118	34	152
San Mateo.....				50		50
Santa Clara.....	178	4	182	42,262	1,678	43,940
Santa Cruz.....	395	45	440	667	3	670
Sonoma.....	139	7	146	16,140	1,116	17,256
Butte.....	102	13	115	2,880	211	3,091
Colusa.....	3		3	3,303	297	3,600
Glenn.....				1,379	261	1,640
Sacramento.....	228		228	430	1	431
Solano.....	597	2	599	3,986	206	4,192
Sutter.....	787	113	900	5,188	923	6,111
Tehama.....		1	1	1,977	376	2,353
Yolo.....	20		20	1,020	59	1,079
Yuba.....	352	15	367	903	298	1,201
Fresno.....	3,310	519	3,829	287	26	313
Kern.....	1,786	22	1,808	1		1
Kings.....	132	14	146	2		2
Madera.....	272		272	8		8
Merced.....	108	28	136			
San Joaquin.....	863	121	984	229	10	239
Stanislaus.....	36		36	1		1
Tulare.....	4,780	525	5,305	649	81	730
Alpine.....						
Amador.....				122		122
Calaveras.....	1		1	1		1
El Dorado.....	159	2	161			
Inyo.....						
Mariposa.....	1		1			
Mono.....						
Nevada.....	42	1	43			
Placer.....	6,498	1,575	8,073	5		5
Sierra.....						
Tuolumne.....						
Imperial.....						
Los Angeles.....	54		54	12		12
Orange.....	9	2	11			
Riverside.....	389	27	416	59	1	60
San Bernardino.....	405	67	472			
San Diego.....	35	28	63	1		1
Santa Barbara.....		2	2			
Ventura.....						
STATE.....	21,965	3,155	25,120	94,614	6,391	101,005

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	GRAPEFRUIT			LEMONS			LIMES	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....								
Mendocino.....								
Shasta.....								
Siskiyou.....								
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....				5		5		
Contra Costa.....								
Lake.....								
Marin.....								
Monterey.....								
Napa.....								
San Benito.....				1		1		
San Luis Obispo.....								
San Mateo.....				25		25	2	
Santa Clara.....				4		4		
Santa Cruz.....				3		3		
Sonoma.....								
Butte.....	1		1	16		16		
Colusa.....								
Glenn.....	6		6					
Sacramento.....	1		1					
Solano.....								
Sutter.....								
Tehama.....								
Yolo.....								
Yuba.....								
Fresno.....	37		37	196		196	2	
Kern.....	24		24	7		7		
Kings.....								
Madera.....					3	3		
Merced.....								
San Joaquin.....								
Stanislaus.....								
Tulare.....	525		525	941	166	1,107	10	2
Alpine.....								
Amador.....								
Calaveras.....								
El Dorado.....								
Inyo.....								
Mariposa.....								
Mono.....								
Nevada.....								
Placer.....								
Sierra.....								
Tuolumne.....								
Imperial.....	1,111		1,111	68		68		
Los Angeles.....	645	1	646	9,466	95	9,561	39	
Orange.....	201		201	4,666	105	4,771	18	
Riverside.....	3,333	574	3,907	3,036	239	3,275	5	4
San Bernardino.....	2,715	20	2,735	5,410	222	5,632	4	
San Diego.....	194	2	196	4,399	441	4,840	174	9
Santa Barbara.....				7,854	1,385	9,239	12	
Ventura.....	317	11	328	18,662	3,330	21,992		
STATE.....	9,110	608	9,718	54,759	5,986	60,745	206	15

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued

County	ORANGES—NAVEL			ORANGES— MISCELLANEOUS			ORANGES— NAVEL AND MISCELLANEOUS	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....								
Mendocino.....				1		1	1	
Shasta.....								
Siskiyou.....								
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....	1		1				1	
Contra Costa.....	1		1				1	
Lake.....								
Marin.....								
Monterey.....								
Napa.....	1	2	3				1	2
San Benito.....								
San Luis Obispo.....								
San Mateo.....								
Santa Clara.....	1		1	1		1	2	
Santa Cruz.....				3		3	3	
Sonoma.....				7		7	7	
Butte.....	789	4	793	53	1	54	842	5
Colusa.....	12		12					
Glenn.....	743		743	1		1	13	
Sacramento.....	361		361	6		6	749	
Solano.....	5		5	9		9	370	
Sutter.....	3		3				5	
Tehama.....	28		28				3	
Yolo.....	18		18				28	
Yuba.....	2		2				18	
Fresno.....	2,429	342	2,771	62		62	2,491	342
Kern.....	1,107	14	1,121	68		68	1,175	14
Kings.....								
Madera.....								
Merced.....	6		6				6	
San Joaquin.....								
Stanislaus.....	4		4				4	
Tulare.....	22,847	789	23,636	435	41	476	23,282	830
Alpine.....								
Amador.....								
Calaveras.....	1		1				1	
El Dorado.....								
Inyo.....								
Mariposa.....								
Mono.....								
Nevada.....								
Placer.....	30		30				30	
Sierra.....								
Tuolumne.....								
Imperial.....	46		46	249		249	295	
Los Angeles.....	8,085	52	8,737	127		127	8,812	52
Orange.....	648	77	725				648	77
Riverside.....	10,999	274	11,273	670	257	927	11,669	531
San Bernardino.....	19,282	89	19,371	713		713	19,995	89
San Diego.....	478	44	522	27	9	36	505	53
Santa Barbara.....	18	2	20	1	7	8	19	9
Ventura.....	1,630	44	1,674	2		2	1,632	44
STATE.....	70,175	1,783	71,908	2,435	315	2,750	72,610	2,048

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued

County	ORANGES—VALENCIA			ORANGES—ALL		
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total
Del Norte.....						
Humboldt.....						
Mendocino.....	1		1	2		2
Shasta.....						
Siskiyou.....						
Trinity.....						
Lassen.....						
Modoc.....						
Plumas.....						
Alameda.....	1		1	2		2
Contra Costa.....				1		1
Lake.....						
Marin.....						
Monterey.....						
Napa.....		2	2	1	4	5
San Benito.....						
San Luis Obispo.....						
San Mateo.....				2		2
Santa Clara.....				3		3
Santa Cruz.....				7		7
Sonoma.....				7		7
Butte.....	7		7	849	5	854
Colusa.....				13		13
Glenn.....	20		20	769		769
Sacramento.....	5		5	375		375
Solano.....				5		5
Sutter.....				3		3
Tehama.....				28		28
Yolo.....	1		1	19		19
Yuba.....				2		2
Fresno.....	565	3	568	3,056	345	3,401
Kern.....	58		58	1,233	14	1,247
Kings.....						
Madera.....						
Merced.....	1		1	7		7
San Joaquin.....						
Stanislaus.....				4		4
Tulare.....	10,035	119	10,154	33,317	949	34,266
Alpine.....						
Amador.....						
Calaveras.....				1		1
El Dorado.....						
Inyo.....						
Mariposa.....						
Mono.....						
Nevada.....						
Placer.....				30		30
Sierra.....						
Tuolumne.....						
Imperial.....	461		461	756		756
Los Angeles.....	19,503	107	19,610	28,315	159	28,474
Orange.....	52,021	223	52,244	52,669	300	52,969
Riverside.....	4,872	49	4,921	16,541	580	17,121
San Bernardino.....	10,145	19	10,164	30,140	108	30,248
San Diego.....	5,428	292	5,720	5,933	345	6,278
Santa Barbara.....	60		60	79	9	88
Ventura.....	17,981	624	18,605	19,613	668	20,281
STATE.....	121,165	1,438	122,603	193,775	3,486	197,261

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	GRAPES—RAISIN			GRAPES—TABLE		
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total
Del Norte.....						
Humboldt.....	3		3			
Mendocino.....	5		5	15		15
Shasta.....	4		4	5		5
Siskiyou.....						
Trinity.....						
Lassen.....						
Modoc.....						
Plumas.....						
Alameda.....	16		16	7		7
Contra Costa.....	36		36	71		71
Lake.....				1		1
Marin.....				2		2
Monterey.....				3		3
Napa.....				39	5	44
San Benito.....				14		14
San Luis Obispo.....	4		4	11		11
San Mateo.....				2		2
Santa Clara.....				26		26
Santa Cruz.....	3		3	33		33
Sonoma.....				14		14
Butte.....	21		21	59		59
Colusa.....	70		70			
Glenn.....	36		36			
Sacramento.....	91		91	1,122		1,122
Solano.....	63		63	21		21
Sutter.....	54		54			
Tehama.....	3	2	5	13	1	14
Yolo.....	29		29	9		9
Yuba.....						
Fresno.....	133,390	2,331	135,721	15,867	233	15,900
Kern.....	12,507	295	12,802	9,583	410	9,993
Kings.....	4,522	115	4,637	61		61
Madera.....	14,131	83	14,214	444		444
Merced.....	8,844	305	9,149	1,836	6	1,842
San Joaquin.....	806	89	895	23,191	282	23,473
Stanislaus.....	6,212	198	6,410	921	17	938
Tulare.....	30,194	323	30,517	27,377	696	28,073
Alpine.....						
Amador.....	21		21			
Calaveras.....	12		12	2		2
El Dorado.....						
Inyo.....				15		15
Mariposa.....						
Mono.....						
Nevada.....	6		6	14		14
Placer.....				122		122
Sierra.....						
Tuolumne.....						
Imperial.....	900	60	960	260		260
Los Angeles.....	196		196	478		478
Orange.....	3		3	38		38
Riverside.....	6,413	1,660	8,082	509	566	1,075
San Bernardino.....	3,070		3,070	1,252		1,252
San Diego.....	2,011	82	2,093	478	159	637
Santa Barbara.....				3	1	4
Ventura.....				176		176
STATE.....	223,676	5,552	229,228	83,894	2,376	86,270

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued

County	GRAPES—WINE			GRAPES—ALL		
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total
Del Norte.....						
Humboldt.....				3		3
Mendocino.....	6,638	64	6,702	6,668	64	6,722
Shasta.....	27		27	36		36
Siskiyou.....	2		2	2		2
Trinity.....						
Lassen.....						
Modoc.....						
Plumas.....						
Alameda.....	3,004		3,004	3,027		3,027
Contra Costa.....	3,406		3,406	3,513		3,513
Lake.....	158		158	159		159
Marin.....	176		176	178		178
Monterey.....	116		116	119		119
Napa.....	10,132	449	10,581	10,171	454	10,625
San Benito.....	1,172		1,172	1,186		1,186
San Luis Obispo.....	578	114	692	593	114	707
San Mateo.....	11		11	13		13
Santa Clara.....	4,948	176	5,124	4,974	176	5,150
Santa Cruz.....	536		536	572		572
Sonoma.....	11,689	163	11,852	11,703	163	11,866
Butte.....	40		40	120		120
Colusa.....	52		52	122		122
Glenn.....	45		45	81		81
Sacramento.....	824		824	2,037		2,037
Solano.....	606		606	690		690
Sutter.....	35	1	36	89	1	90
Tehama.....	66		66	82	3	85
Yolo.....	256	17	273	294	17	311
Yuba.....	42		42	42		42
Fresno.....	10,928	238	11,166	159,985	2,802	162,787
Kern.....	3,743	109	3,852	25,833	814	26,647
Kings.....	517	15	532	5,100	130	5,230
Madera.....	3,351		3,351	17,926	83	18,009
Merced.....	4,134	149	4,283	14,314	460	15,274
San Joaquin.....	30,563	353	30,916	54,560	724	55,284
Stanislaus.....	8,758	167	8,925	15,891	382	16,273
Tulare.....	7,323	89	7,412	64,894	1,108	66,002
Alpine.....						
Amador.....	690		690	711		711
Calaveras.....	200	3	203	214	3	217
El Dorado.....	79		79	79		79
Inyo.....	2		2	17		17
Mariposa.....						
Mono.....						
Nevada.....	53		53	73		73
Placer.....	951	38	989	1,073	38	1,111
Sierra.....						
Tuolumne.....	4		4	4		4
Imperial.....				1,160	60	1,220
Los Angeles.....	633		633	1,307		1,307
Orange.....	3		3	44		44
Riverside.....	3,543		3,543	10,465	2,235	12,700
San Bernardino.....	24,960	371	25,331	29,282	371	29,653
San Diego.....	984	12	996	3,473	253	3,726
Santa Barbara.....	12		12	15	1	16
Ventura.....	15		15	191		191
STATE.....	146,005	2,528	148,533	453,575	10,456	464,031

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	FIGS—KADOTA			FIGS—OTHERS			FIGS—ALL	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....				1		1	1	
Mendocino.....				1		1	1	
Shasta.....				3		3	3	
Siskiyou.....								
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....								
Contra Costa.....	56		56				56	
Lake.....								
Marin.....								
Monterey.....								
Napa.....				1		1	1	
San Benito.....								
San Luis Obispo.....								
San Mateo.....								
Santa Clara.....				5		5	5	
Santa Cruz.....				2		2	2	
Sonoma.....				19		19	19	
Butte.....	19		19	71		71	90	
Colusa.....				9		9	9	
Glenn.....	156		156	43		43	199	
Sacramento.....	52		52	48		48	100	
Solano.....				107		107	107	
Sutter.....								
Tehama.....	3		3	49		49	52	
Yolo.....				413		413	413	
Yuba.....				132		132	132	
Fresno.....	725		725	13,361	445	13,806	14,086	445
Kern.....				5		5	5	
Kings.....	19		19	1,131	710	1,841	1,150	710
Madera.....	3,248	27	3,275	4,343	13	4,356	7,591	40
Merced.....	379		379	30		30	409	
San Joaquin.....	87		87	24		24	111	
Stanislaus.....	363		363	228		228	591	
Tulare.....								
Alpine.....								
Amador.....								
Calaveras.....								
El Dorado.....								
Inyo.....								
Mariposa.....								
Mono.....								
Nevada.....								
Placer.....								
Sierra.....								
Tuolumne.....								
Imperial.....								
Los Angeles.....	70	1	71	122	17	139	192	18
Orange.....								
Riverside.....				82	5	87	82	5
San Bernardino.....								
San Diego.....				11	29	40	11	29
Santa Barbara.....								
Ventura.....								
STATE.....	5,177	28	5,205	20,241	1,219	21,460	25,418	1,247

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued

County	OLIVES			DATES			AVOCADOS	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....								
Mendocino.....	7		7					
Shasta.....	734	22	756					
Siskiyou.....								
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....	25		25					
Contra Costa.....	27		27					
Lake.....	1		1					
Marin.....								
Monterey.....	3		3					
Napa.....	68		68					
San Benito.....	1		1					
San Luis Obispo.....	3		3					
San Mateo.....								
Santa Clara.....	21	10	31				2	10
Santa Cruz.....								
Sonoma.....	29		29					
Butte.....	4,882	173	5,055				1	3
Colusa.....	15	22	37					
Glenn.....	720	127	847					
Sacramento.....	1,150		1,150					
Solano.....	15		15					
Sutter.....	61	1	62					
Tehama.....	3,082	463	3,545					
Yolo.....	388	27	415					
Yuba.....	678	14	692					
Fresno.....	957	97	1,054				2	
Kern.....	228	50	278					
Kings.....	354	40	394					
Madera.....	583	40	623					
Merced.....	118	11	129					
San Joaquin.....	384	52	436					
Stanislaus.....	396	1	397					
Tulare.....	7,829	1,569	9,398					
Alpine.....								
Amador.....	6		6					
Calaveras.....	238	25	263					
El Dorado.....				35		35		
Inyo.....	1		1					
Mariposa.....								
Mono.....								
Nevada.....								
Placer.....	254	17	271					
Sierra.....								
Tuolumne.....								
Imperial.....				196		196		
Los Angeles.....	1,405	21	1,426				2,698	110
Orange.....	99		99				2,094	609
Riverside.....	1,136	105	1,241	4,641	171	4,812	157	128
San Bernardino.....	470	130	600	8		8	62	10
San Diego.....	920	29	949	35		35	8,814	4,551
Santa Barbara.....	266		266				574	671
Ventura.....	22		22				668	942
STATE.....	27,576	3,046	30,622	4,915	171	5,086	15,072	7,034

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued

County	ALMONDS			CHESTNUTS			FILBERTS	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....				34		34		
Mendocino.....				5		5	1	
Shasta.....	5	6	11					
Siskiyou.....								
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....	80		80	4		4		
Contra Costa.....	7,725	581	8,306					
Lake.....	273	29	302	1		1		
Marin.....	7		7					
Monterey.....	1,496	1	1,497					
Napa.....	2	1	3	1		1		
San Benito.....	21	3	24					
San Luis Obispo.....	7,926	450	8,376					
San Mateo.....	4		4					
Santa Clara.....	179	7	186				1	
Santa Cruz.....	1	1	2	47	1	48	2	
Sonoma.....	2	2	4	4	1	5	15	2
Butte.....	14,599	1,604	16,203	1		1	8	
Colusa.....	8,550	1,145	9,695	1		1		
Glenn.....	4,305	466	4,771					
Sacramento.....	919	58	977					
Solano.....	2,007	271	2,278					
Sutter.....	5,367	672	6,039					
Tehama.....	1,683	239	1,922					
Yolo.....	8,994	408	9,402					
Yuba.....	415	263	678					
Fresno.....	1,015	360	1,375					
Kern.....	47	45	92					
Kings.....	2		2					
Madera.....	423	66	489					
Merced.....	7,454	1,252	8,706					
San Joaquin.....	8,976	1,284	10,260	105	3	108	1	
Stanislaus.....	6,242	935	7,177		5	5		
Tulare.....	264	10	274					
Alpine.....								
Amador.....	11		11	6		6		
Calaveras.....	137	16	153	15		15		
El Dorado.....	5		5					
Inyo.....								
Mariposa.....								
Mono.....								
Nevada.....				5		5	5	
Placer.....	272	29	301					
Sierra.....								
Tuolumne.....	2	1	3	14	3	17		
Imperial.....								
Los Angeles.....	1,992	245	2,237					
Orange.....				1		1		
Riverside.....	252	17	269					
San Bernardino.....	78	4	82					
San Diego.....	6	5	11				1	3
Santa Barbara.....	50	2	52					
Ventura.....	203	2	205					
STATE.....	91,991	10,479	102,470	244	13	257	34	5

CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued

County	PECANS			WALNUTS		
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total
Del Norte.....				35		35
Humboldt.....				444	226	670
Mendocino.....						
Shasta.....	1	1	2	59	15	74
Siskiyou.....				5		5
Trinity.....				87		87
Lassen.....						
Modoc.....						
Plumas.....						
Alameda.....				933	279	1,212
Contra Costa.....	2		2	14,122	841	14,963
Lake.....				4,814	1,281	6,095
Marin.....				73	8	81
Monterey.....				833	284	1,117
Napa.....				1,705	287	1,992
San Benito.....				1,833	238	2,071
San Luis Obispo.....				765	274	1,039
San Mateo.....				101	16	117
Santa Clara.....				8,280	908	9,188
Santa Cruz.....				44	4	48
Sonoma.....				1,480	236	1,716
Butte.....	22	2	24	2,782	894	3,676
Colusa.....	1		1	1,006	401	1,407
Glenn.....	7	9	16	778	74	852
Sacramento.....	6	1	7	1,271	110	1,381
Solano.....				571	56	627
Sutter.....	6	2	8	3,583	2,535	6,118
Tehama.....	6		6	1,279	830	2,109
Yolo.....				750	128	878
Yuba.....	3		3	752	286	1,038
Fresno.....	24	4	28	1,518	362	1,880
Kern.....	20		20	7	22	29
Kings.....	1	1	2	675	237	912
Madera.....				41		41
Merced.....	13		13	2,329	782	3,111
San Joaquin.....				12,126	1,460	13,586
Stanislaus.....	23	2	25	8,065	3,500	11,565
Tulare.....	55	26	81	5,554	3,867	9,421
Alpine.....				208	22	230
Amador.....				433	21	454
Calaveras.....		1	1	110	52	162
El Dorado.....						
Inyo.....						
Mariposa.....						
Mono.....				15		15
Nevada.....				58	10	68
Placer.....						
Sierra.....				21		21
Tuolumne.....						
Imperial.....	148		148			
Los Angeles.....	73		73	6,548	102	6,650
Orange.....	1		1	959	9	968
Riverside.....	140		140	5,021	415	5,436
San Bernardino.....				2,556	35	2,591
San Diego.....	32	2	34	915	86	1,001
Santa Barbara.....				2,126	783	2,909
Ventura.....				16,391	1,577	17,968
STATE.....	584	51	635	114,061	23,553	137,614

**CALIFORNIA FRUIT AND NUT ACREAGE ESTIMATES BY COUNTIES AND
STATE TOTALS AS OF 1953—Continued**

County	PERSIMMONS			POMEGRANATES			QUINCES	
	Bearing	Non-bearing	Total	Bearing	Non-bearing	Total	Bearing	Non-bearing
Del Norte.....								
Humboldt.....								
Mendocino.....								
Shasta.....	80		80					
Siskiyou.....								
Trinity.....								
Lassen.....								
Modoc.....								
Plumas.....								
Alameda.....								
Contra Costa.....							2	
Lake.....								
Marin.....								
Monterey.....								
Napa.....	1		1					
San Benito.....								
San Luis Obispo.....								
San Mateo.....								
Santa Clara.....	6		6					
Santa Cruz.....	19		19					
Sonoma.....							5	
Butte.....	19		19					
Colusa.....								
Glenn.....	3		3					
Sacramento.....	7		7				152	
Solano.....								
Sutter.....	6		6					
Tehama.....								
Yolo.....								
Yuba.....	3		3					
Fresno.....	49		49	183	4	187		
Kern.....	20		20	20		20		
Kings.....	4		4					
Madera.....								
Merced.....				10		10		
San Joaquin.....	8		8				11	
Stanislaus.....	8		8	6		6	1	
Tulare.....	61	18	79	222	101	323	5	2
Alpine.....								
Amador.....								
Calaveras.....								
El Dorado.....								
Inyo.....								
Mariposa.....								
Mono.....								
Nevada.....								
Placer.....	99	4	103				9	
Sierra.....								
Tuolumne.....								
Imperial.....								
Los Angeles.....	35		35					
Orange.....	143	10	153					
Riverside.....	29		29					
San Bernardino.....	15		15					
San Diego.....	23	27	50					
Santa Barbara.....	1		1					
Ventura.....								
STATE.....	639	59	698	441	105	546	185	2

CALIFORNIA FRUIT AND NUT CROP ACREAGES AS OF 1953—BY VARIETIES AND
AGE GROUPS—STATE SUMMARY
Acreage Planted During Years Shown and Standing in 1953

Crop and variety	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1935 to 1939	1930 to 1934	1929 or earlier	Total	Bearing acreage in 1953*	Non- bearing acreage in 1953*
ALMONDS—																				
Drake.....	12	5	-----	10	30	43	55	89	72	33	76	65	80	244	770	613	6,424	8,487	8,487	134
IXL.....	4	-----	10	35	21	29	59	79	68	58	52	32	61	98	429	354	4,915	6,205	6,205	99
Jordanola.....	29	88	235	202	396	516	467	440	272	99	107	182	182	468	196	50	1,200	2,478	2,478	1,587
Lovell.....	-----	-----	-----	4	-----	-----	4	8	-----	-----	25	5	3	10	-----	-----	182	265	265	6
Mission ¹	102	171	265	211	363	563	796	900	691	573	608	706	715	1,199	3,025	1,067	18,262	16,453	16,453	1,809
Ne Plus Ultra.....	93	53	214	168	220	339	377	309	339	239	179	326	357	667	1,982	926	5,614	11,184	11,184	1,208
Nonpareil.....	370	501	614	585	1,121	1,276	1,654	1,764	1,265	1,010	926	1,099	1,193	2,180	7,677	4,168	12,392	42,918	38,170	4,748
Nonpareil.....	36	25	64	89	108	167	210	240	160	156	116	130	103	402	894	611	5,812	5,266	5,266	546
Other almonds.....	42	-----	3	38	89	97	69	79	80	69	101	78	54	105	259	331	2,281	3,825	3,483	342
All almonds.....	688	843	1,406	1,432	2,349	3,030	3,691	2,947	2,237	2,237	2,190	2,539	2,748	5,373	15,242	8,128	43,719	91,991	91,991	10,479
APPLES—																				
Astrachan.....	-----	-----	-----	5	4	8	28	31	16	39	1	-----	7	-----	50	3	35	222	182	40
Bellflower.....	-----	-----	-----	115	124	171	278	490	260	262	133	191	128	240	632	473	1,277	5,087	4,986	980
Delicious.....	168	77	78	20	13	17	108	120	49	30	20	22	1	26	95	19	1,277	5,087	4,986	1,011
Golden Delicious.....	19	25	11	10	1	11	13	31	3	-----	4	-----	1	26	95	19	1,277	5,087	4,986	1,011
Gravenstein.....	19	20	6	10	34	44	86	28	23	25	22	6	3	23	107	74	5,470	5,807	5,271	80
Jonathan.....	14	13	6	10	34	44	86	28	23	25	22	6	3	23	107	74	5,470	5,807	5,271	80
Newtown.....	2	13	13	24	9	38	204	124	29	99	70	28	67	43	311	255	4,605	1,230	1,019	201
Rome Beauty.....	46	27	19	49	37	41	41	70	48	19	26	8	21	51	155	139	760	1,387	1,387	303
White Pearmain.....	-----	-----	3	-----	-----	-----	-----	11	13	7	7	4	1	-----	2	31	253	1,387	1,387	260
Winesap.....	-----	-----	1	5	-----	8	7	33	40	-----	-----	-----	2	5	27	58	587	312	687	3
Other apples.....	8	20	16	32	68	32	80	91	60	40	18	12	20	48	188	189	2,700	3,617	3,557	260
All apples.....	276	190	157	270	292	395	845	1,038	506	476	302	269	257	445	1,653	1,322	17,527	23,791	23,791	2,429
APRICOTS—																				
Bienheim and Royal.....	147	254	91	164	197	290	589	327	470	345	380	400	354	825	3,276	2,643	25,254	35,232	35,232	894
Moorepark and Henshirk.....	-----	-----	-----	1	1	10	-----	5	4	2	5	-----	6	14	20	17	812	897	895	2
Tilton.....	32	103	18	15	25	104	111	118	77	58	108	107	141	88	951	546	3,314	5,748	5,748	168
Other apricots.....	8	3	4	29	21	11	21	11	11	12	32	18	3	17	44	203	691	1,077	1,077	56
All apricots.....	187	360	113	209	244	415	721	461	556	417	525	585	504	944	4,291	3,409	30,071	42,952	42,952	1,060

* See discussion in introduction.

1 Synonymous with "Texas."

2 All red varieties.

CALIFORNIA FRUIT AND NUT CROP ACRES AS OF 1953—BY VARIETIES AND
AGE GROUPS—STATE SUMMARY—Continued

Acres Planted During Years Shown and Standing in 1953

Crop and variety	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1935 to 1939	1930 to 1934	1929 or earlier	Total	Bearing acres in 1953*	Non- bearing acres in 1953*
AVOCADOS—																				
Anaheim.....	4	21	27	38	27	25	16	17	10	19	10	4	3	11	39	76	43	380	273	117
Dickinson.....					1		1	1						2	8	21	28	60	59	1
Puerto.....	399	591	1,186	1,491	1,138	1,067	1,117	838	575	644	296	382	420	353	1,435	2,475	1,777	16,784	11,979	4,805
Lyons.....														2	7	10	12	34	34	
Natal.....		1	3	5	4	5	9	6	4	5	2	2	1	4	43	102	37	233	220	13
Puebla.....					1										5	30	70	107	106	
Other avocados.....	148	369	475	489	603	405	259	199	104	109	42	74	75	131	322	329	365	4,498	2,401	2,097
All avocados.....	551	982	1,691	2,023	1,774	2,102	1,402	1,061	693	780	350	463	499	503	1,859	3,043	2,330	22,106	15,072	7,034
CHERRIES—																				
Bing.....	246	114	55	61	229	178	238	65	144	46	59	56	47	64	281	547	1,900	4,330	3,535	795
Black Republican.....	1		5	3	11	3		2	1		1	1	4	2	14	34	150	232	209	23
Chapman.....				4	2		8	3	1	4	1	6	1	28	33	72	132	300	290	10
Lambert.....	5	10	2	13	10	6		17	3			2	2	2	33	94	284	496	454	42
Royal Ann.....	45	63	140	90	284	155	124	40	32	37	37	32	33	59	172	385	1,950	3,688	2,952	736
Tartarian.....	11	9	17	9	48	24	36	15	9	17	12	15	11	15	89	238	1,034	1,609	1,501	108
Other cherries.....	24	42	12	28	50	10	12	6	20	11	3	1	4	9	40	59	298	629	464	165
All cherries.....	332	238	235	208	644	379	435	134	218	117	113	113	102	177	662	1,429	5,748	11,284	9,405	1,879
CHESTNUTS—																				
all varieties.....		1				8	3	1	2	1		1		3	30	57	150	257	244	13
DATES—																				
Deelet Noor.....		14	27	15	4	57	204	376	146	173	93	86	70	110	695	910	1,223	4,203	4,086	117
Khadrawy.....			2				7	9	1	1	4		7	27	40	18	44	160	158	2
Sady.....															8	17	35	60	60	
Zabidi.....				1		18	37	8	14	9	3	5	2	10	30	32	43	212	193	19
Other varieties.....		4	3		2	24	26	24	12	4	3	1	4	13	69	51	211	451	418	33
All dates.....		18	32	16	6	99	274	417	173	187	103	92	83	160	842	1,028	1,556	5,086	4,915	171

* See discussion in introduction.

CALIFORNIA FRUIT AND NUT CROP ACRES AS OF 1953—BY VARIETIES AND
AGE GROUPS—STATE SUMMARY—Continued

Acres Planted During Years Shown and Standing in 1953

Crop and variety	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1935 to 1939	1930 to 1934	1929 or earlier	Total	Bearing acreage in 1953*	Non- bearing acreage in 1953*
FIGS—																				
Black varieties.....	9	11	10	1	1	11	218	127	114	---	35	---	1	11	61	117	2,565	3,992	3,046	246
Calimyrna.....	---	---	180	8	---	82	40	---	8	---	15	5	---	---	45	19	9,865	10,267	9,957	310
Kadota.....	---	---	28	---	---	3	90	178	252	339	87	---	8	4	237	79	3,900	5,205	5,177	28
White Adriatic.....	9	---	221	27	27	131	228	266	408	67	142	104	122	51	121	55	5,585	7,564	6,921	643
Other figs.....	---	---	9	---	4	5	3	3	2	6	1	7	9	8	30	27	223	337	317	20
All figs.....	18	11	448	36	32	232	579	574	784	412	280	116	140	74	494	237	22,138	26,665	25,418	1,247
FILBERTS—all varieties...	2	---	---	---	3	3	---	---	6	---	3	---	---	2	6	9	5	39	34	5
GRAPES—RAISIN																				
Muscat.....	35	52	485	341	203	342	976	653	850	443	271	250	261	325	1,331	548	25,375	32,741	32,169	572
Sultana.....	---	---	10	11	---	4,433	7,015	6,387	5,871	3,405	2,490	2,711	3,158	23	116	119	3,105	3,390	3,390	---
Thompson Seedless.....	1,083	1,280	2,610	2,437	2,637	4,433	131	69	44	24	40	123	89	166	589	14,157	103,771	189,305	184,332	4,973
Zante Currant.....	---	---	2	10	---	28	11	11	14	172	216	27	25	35	233	139	608	2,262	2,256	---
Other raisin varieties.....	---	1	---	---	18	---	---	---	---	---	---	---	---	---	---	---	---	1,530	1,529	1
All raisin varieties.....	1,122	1,333	3,097	2,799	2,910	4,803	8,133	7,123	6,799	4,046	3,017	3,112	3,533	5,191	23,487	15,435	133,283	229,228	223,676	5,552
GRAPES—TABLE																				
Cardinal.....	32	64	557	652	865	861	167	62	47	6	6	10	15	6	5	17	---	3,335	2,632	653
Concord.....	---	---	21	10	---	55	5	49	24	---	---	---	---	---	51	44	148	465	465	---
Emperor.....	119	64	212	389	422	743	1,743	2,302	3,193	1,872	775	981	370	1,264	5,060	2,266	8,933	30,708	30,313	395
Malaga.....	---	---	6	10	---	8	20	222	159	66	32	24	14	26	226	397	7,122	8,370	8,354	16
Red Malaga.....	---	---	60	37	282	376	718	773	547	535	87	31	117	171	804	559	1,478	6,575	6,515	60
Riber.....	3	36	115	27	62	103	365	606	392	257	117	120	199	111	1,155	872	1,546	6,076	5,932	144
Tokay.....	49	27	210	33	83	184	494	575	849	726	376	318	337	434	1,391	836	17,800	24,772	24,486	286
Other table varieties.....	137	244	441	204	185	189	72	406	476	166	72	218	13	97	338	186	2,525	5,969	5,147	822
All table varieties.....	340	431	1,805	1,391	1,919	2,519	3,584	4,995	5,687	3,638	1,465	1,702	1,115	2,130	9,030	5,177	39,552	86,270	83,894	2,376

* See discussion in introduction.
1 Concord and other American type grapes.

CALIFORNIA FRUIT AND NUT CROP ACREAGES AS OF 1953—BY VARIETIES AND AGE GROUPS—STATE SUMMARY—Continued
Acreage Planted During Years Shown and Standing in 1953

Crop and variety	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1935 to 1939	1930 to 1934	1929 or earlier	Total	Bearing average in 1953*	Non- bearing average in 1953*
GRAPES—WINE																				
Alicante Bouschet.....	102	26	19	41	403	148	677	326	214	37	27	19	86	586	1,571	10,911	15,193	15,065	128	
Burger.....	3	1	5	173	74	134	361	295	214	135	494	362	627	2,025	2,759	14,602	29,847	3,452	4	
Carguane.....	68	121	445	226	218	707	1,432	1,745	2,258	1,201	557	494	362	627	2,025	2,759	14,602	29,213	634	
Colombar.....	6	15	16	35	87	127	112	125	81	10	27	16	5	101	70	363	1,196	1,175	21	
Franken Riesling.....	7	15	10	9	19	47	133	94	133	22	2	23	19	43	79	18	283	956	924	32
Golden Chasselas.....	1	32	8	18	131	352	277	748	536	108	193	82	253	799	472	1,178	5,188	5,155	33	
Grenache.....	38	60	96	105	86	302	942	594	1,529	664	286	791	180	262	734	235	2,152	9,056	8,862	194
Mataro.....	1	2	5	28	43	21	53	11	12	9	6	13	41	158	531	3,453	4,387	4,351	36	
Mission.....	12	19	13	37	262	348	289	1,441	450	244	238	152	248	1,030	343	5,319	10,445	10,412	33	
Palomino.....	5	31	26	88	542	801	1,457	420	150	175	61	41	478	306	447	5,029	5,024	5,024	5	
Petite Sirah.....	29	17	62	54	32	68	92	49	287	146	44	62	56	53	198	334	3,455	4,930	108	
Sauvignon Blanc.....	4	47	110	85	156	94	75	59	102	24	56	258	198	457	1,739	1,725	1,739	1,725	14	
Zinfandel.....	197	58	254	95	266	369	393	574	816	505	332	329	457	757	2,119	25,089	35,757	35,245	512	
Other white varieties.....	25	29	76	101	163	233	349	361	1,088	1,217	434	216	128	137	833	2,168	8,677	8,530	147	
Other dark varieties.....	114	162	323	337	360	530	639	1,156	1,048	339	192	131	250	1,050	772	4,278	12,569	11,942	627	
All wine varieties.....	483	588	1,379	1,107	3,532	5,845	6,555	11,833	6,886	2,825	3,010	1,714	2,917	11,375	11,814	75,274	148,533	146,005	2,528	
GRAPEFRUIT—																				
Marsh.....	17	7	7	11	7	12	73	78	64	37	40	34	112	1,487	2,836	3,834	8,684	8,635	49	
Other grapefruit.....	128	292	85	41	13	100	81	12	9	1	2	1	-----	55	49	165	1,034	475	559	
All grapefruit.....	145	299	92	52	20	112	109	85	78	38	42	35	112	1,542	2,885	3,999	9,718	9,110	608	
LEMONS—																				
Eureka.....	1,054	475	794	1,451	1,639	1,631	1,295	921	598	708	634	794	1,216	2,624	11,079	9,634	17,778	54,325	5,413	
Lisbon.....	100	82	56	72	55	78	92	23	37	30	18	71	33	207	633	627	2,174	4,388	398	
Villa Franca.....	5	-----	19	22	13	41	34	17	8	10	1	12	5	40	303	134	1,096	1,155	59	
Other lemons.....	54	5	15	22	17	106	5	8	2	2	6	4	10	51	106	71	393	877	761	116
All lemons.....	1,213	562	884	1,567	1,724	1,856	1,426	969	645	750	659	881	1,264	2,922	12,121	10,466	20,836	60,745	54,759	5,985
LIMES—all varieties.....	3	6	4	2	4	-----	3	4	4	2	26	16	7	21	135	36	281	266	15	

* See discussion in Introduction.

CALIFORNIA FRUIT AND NUT CROP ACRES AS OF 1953—BY VARIETIES AND
AGE GROUPS—STATE SUMMARY—Continued
Acreage Planted During Years Shown and Standing in 1953

Crop and variety	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1935 to 1939	1930 to 1934	1929 or earlier	Total in 1953*	Bearing acres in 1953*	Non- bearing acres in 1953*
NECTARINES—																				
Gower.....	13	5	72	15	26	53	17	13	8	9	7	10	28	33	107	95	47	470	365	105
Quetta.....	46	13	56	66	26	25	19	11	16	18	21	15	10	21	121	59	76	624	443	181
Rivers.....	76	64	220	48	24	25	19	12	7	16	21	49	70	139	305	92	16	1,203	705	408
Stanwick.....	332	283	190	248	92	165	83	85	36	41	96	44	4	18	90	24	17	1,888	1,149	6
Other nectarines.....	467	365	538	383	142	246	134	121	67	99	124	118	119	217	679	286	205	4,310	2,557	1,753
All nectarines.....																				
OLIVES—																				
Ascolano.....			1	28	4	2	38	8	12	24	34	8	---	15	2	10	865	849	778	71
Barouni.....				7		2	2						---	11	2	2	303	336	925	11
Manzanillo.....	18	134	254	312	229	357	503	376	406	456	372	253	59	142	245	253	5,968	9,937	8,330	1,807
Mission.....	3	5	1	41	35	74	143	132	230	50	131	112	41	53	157	308	11,701	13,217	12,915	302
Sevillano.....	14	134	59	164	53	120	201	230	116	166	61	43	34	111	134	127	2,989	4,766	4,011	745
Other olives.....			3	52	1	23	7	42	78	73	20	6	6	20	24	81	1,067	1,527	1,417	110
All olives.....	35	276	339	604	322	576	894	688	842	776	618	422	140	352	564	781	22,393	30,622	27,576	3,046
ORANGES—																				
Valencia.....	32	74	143	389	770	2,352	2,445	2,149	1,688	1,385	987	1,404	1,159	2,170	9,658	17,707	78,091	122,603	121,165	1,438
Navel.....	359	243	189	173	472	432	393	350	201	290	305	342	189	364	2,568	4,826	60,212	71,908	70,175	1,733
Tangerines.....	66	46	29	55	66	44	59	104	2	13	15	71	5	19	74	118	1,047	1,047	785	261
Other varieties.....			1	11	15	15	5	4	5	5	6	12	3	3	72	47	1,277	1,441	1,441	46
Seedlings.....					7										1	1	208	216	209	7
Navel and miscellaneous.....	425	290	229	249	545	491	457	458	208	308	326	425	197	386	2,714	4,992	61,958	74,658	72,610	2,048
All oranges.....	457	364	372	638	1,315	2,843	2,902	2,607	1,896	1,693	1,313	1,829	1,356	2,556	12,372	22,699	140,049	197,261	193,775	3,486

* See discussion in introduction.

CALIFORNIA FRUIT AND NUT CROP ACRES AS OF 1934 BY VARIETIES AND AGE GROUPS—STATE SUMMARY—Continued

Acreage Planted During Years Shown and Standing in 1934

Crop and variety	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	18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THE ILLINOIS DEPARTMENT OF AGRICULTURE HAS THE HONOR TO ANNOUNCE THAT THE FOLLOWING LIST OF THE ILLINOIS DEPARTMENT OF AGRICULTURE HAS BEEN RECEIVED FROM THE ILLINOIS DEPARTMENT OF AGRICULTURE.

STATE OF ILLINOIS, DEPARTMENT OF AGRICULTURE, CHICAGO, ILL., JANUARY 1, 1900.

Year	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Total	Per acre	Per bushel
Wheat	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barley	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oats	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Rye	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Timothy	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Alfalfa	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

THE ILLINOIS DEPARTMENT OF AGRICULTURE HAS THE HONOR TO ANNOUNCE THAT THE FOLLOWING LIST OF THE ILLINOIS DEPARTMENT OF AGRICULTURE HAS BEEN RECEIVED FROM THE ILLINOIS DEPARTMENT OF AGRICULTURE.

CALIFORNIA FRUIT AND NUT CROP ACRES AS OF 1953—BY VARIETIES AND
AGE GROUPS—STATE SUMMARY—Continued

Acreage Planted During Years Shown and Standing in 1953

Crop and variety	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1935 to 1939	1930 to 1934	1929 or earlier	Total	Bearing acreage in 1953*	Non- bearing acreage in 1953*
POMEGRANATES—																				
Wonderful.....	1	33	14	34	18	3	11	2		6	36			6	106	68	183	521	439	82
Other pomegranates.....	20	3															2	25	2	23
All pomegranates.....	21	36	14	34	18	3	11	2	6	36				6	106	68	185	546	441	105
PRUNES—																				
Burton.....	5					47		5		29	21	27	8		4	13	81	240	188	52
French.....	775	802	698	671	813	1,689	1,941	1,160	938	693	466	879	550	1,002	3,662	4,142	67,558	88,419	82,700	5,719
Imperial.....	21	22	41	34	31	76	86	31	13	53	35	124	85	99	477	677	5,101	7,006	6,755	251
Robe de Sergeant.....	13	56	4	17	45	90	51	22	21	21	19	30	5	12	129	129	661	1,325	1,100	225
Sugar.....		12	10	9	8		11		11	30	12	5		47	165	195	2,841	3,325	3,325	57
Other prunes.....	13	20	10	10	27	6	20	39	43	23	21	12	1	6	32	11	339	633	546	87
All prunes.....	827	912	763	741	924	1,925	2,118	1,257	1,026	849	574	1,077	649	1,166	4,469	5,167	76,561	101,005	94,614	6,391
QUINCES—all varieties.....		2								11	20	55	1	2	32	16	48	187	185	2
WALNUTS—																				
Concord.....	8	84	1	4	32	62	127	344	76	68	15	39	158	326	597	1,749	5,114	8,804	8,478	326
Eureka.....	253	152	113	248	291	360	617	528	352	329	328	288	208	385	1,545	2,117	8,558	16,712	14,678	2,034
Frankette.....	52	121	250	560	1,056	1,220	2,133	2,050	1,837	1,333	904	1,455	949	1,739	4,196	5,279	12,296	37,470	28,274	9,196
Harvey.....	577	304	455	824	762	668	802	717	307	136	109	123	71	96	165	146	175	6,437	4,964	4,964
Mayette.....	18	4	15	25	56	48	118	145	86	126	121	95	116	192	529	763	3,312	5,739	5,473	266
Payne.....	343	260	549	589	798	980	930	765	548	450	300	452	567	728	3,192	3,614	8,658	23,733	20,137	3,586
Pacifica and similar.....	12		24	99	214	80	425	213	117	68	49	54	80	178	714	3,784	18,852	24,963	24,109	854
Other varieties.....	165	194	87	219	351	402	339	295	190	128	79	116	112	303	686	1,220	6,423	11,309	9,607	1,802
Seedlings.....	99	68	12	104	12	55	107	65	58	18		84		66	17	25	1,610	2,427	1,932	495
All walnuts.....	1,567	1,187	1,533	2,672	3,572	3,875	5,508	5,122	3,571	2,656	1,905	2,706	2,321	4,013	11,641	18,697	64,978	137,614	114,061	23,553

* See discussion in Introduction.

